Figure 1: How Total Travel Cost Management (TTCM) Works

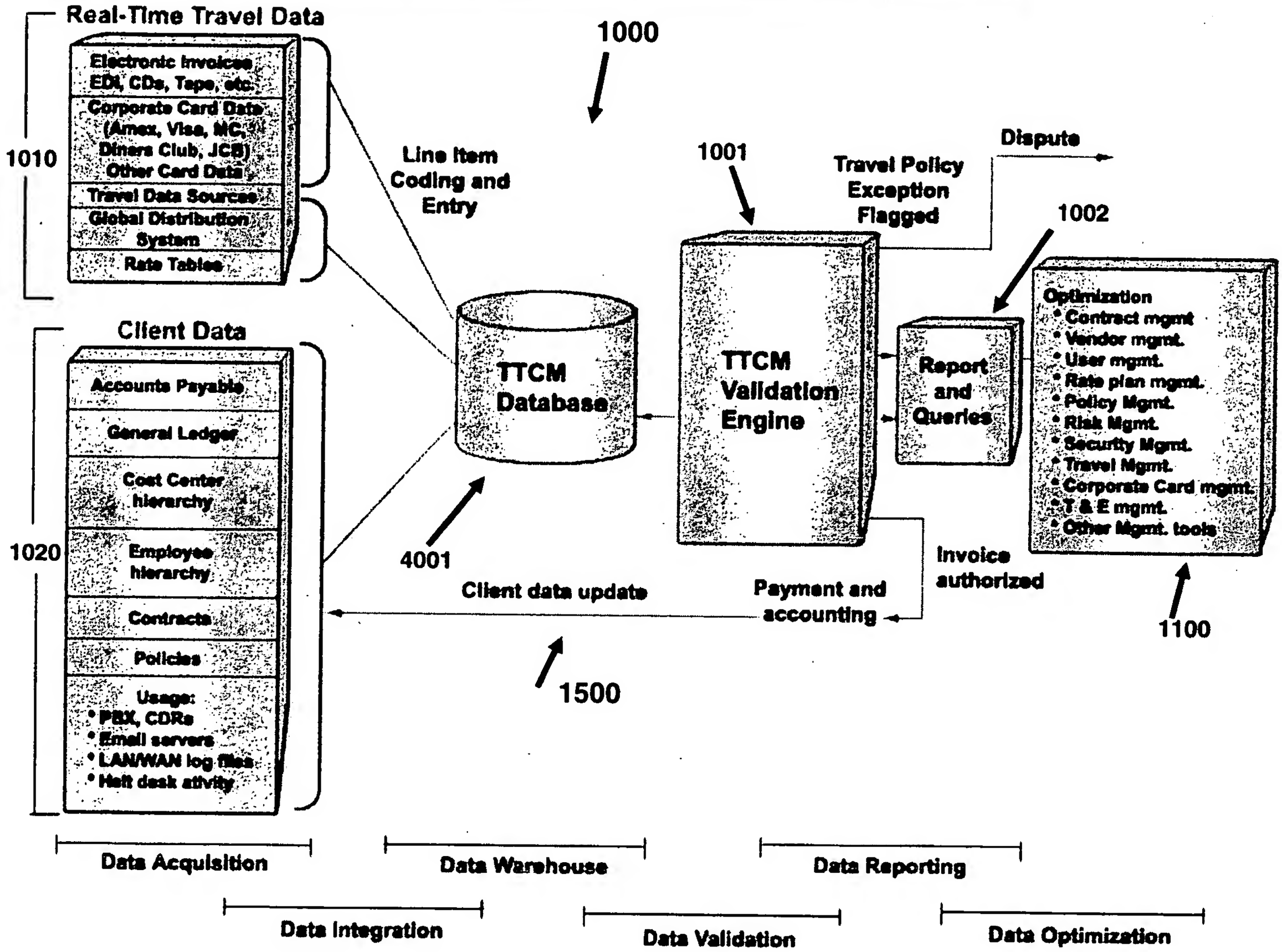


Figure2: Total Travel Cost Management (TTCM) Service Lifecycle

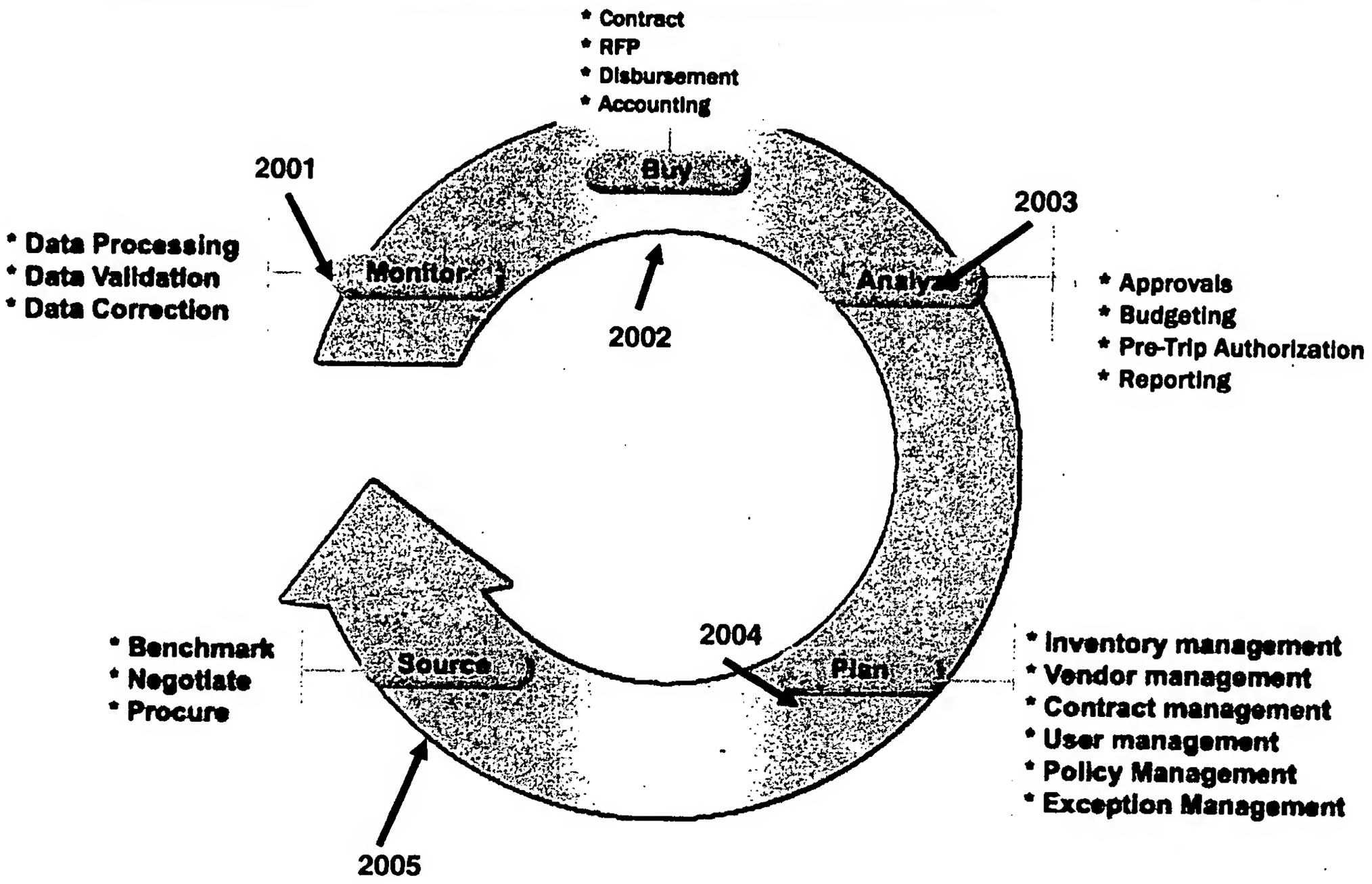


Figure 3

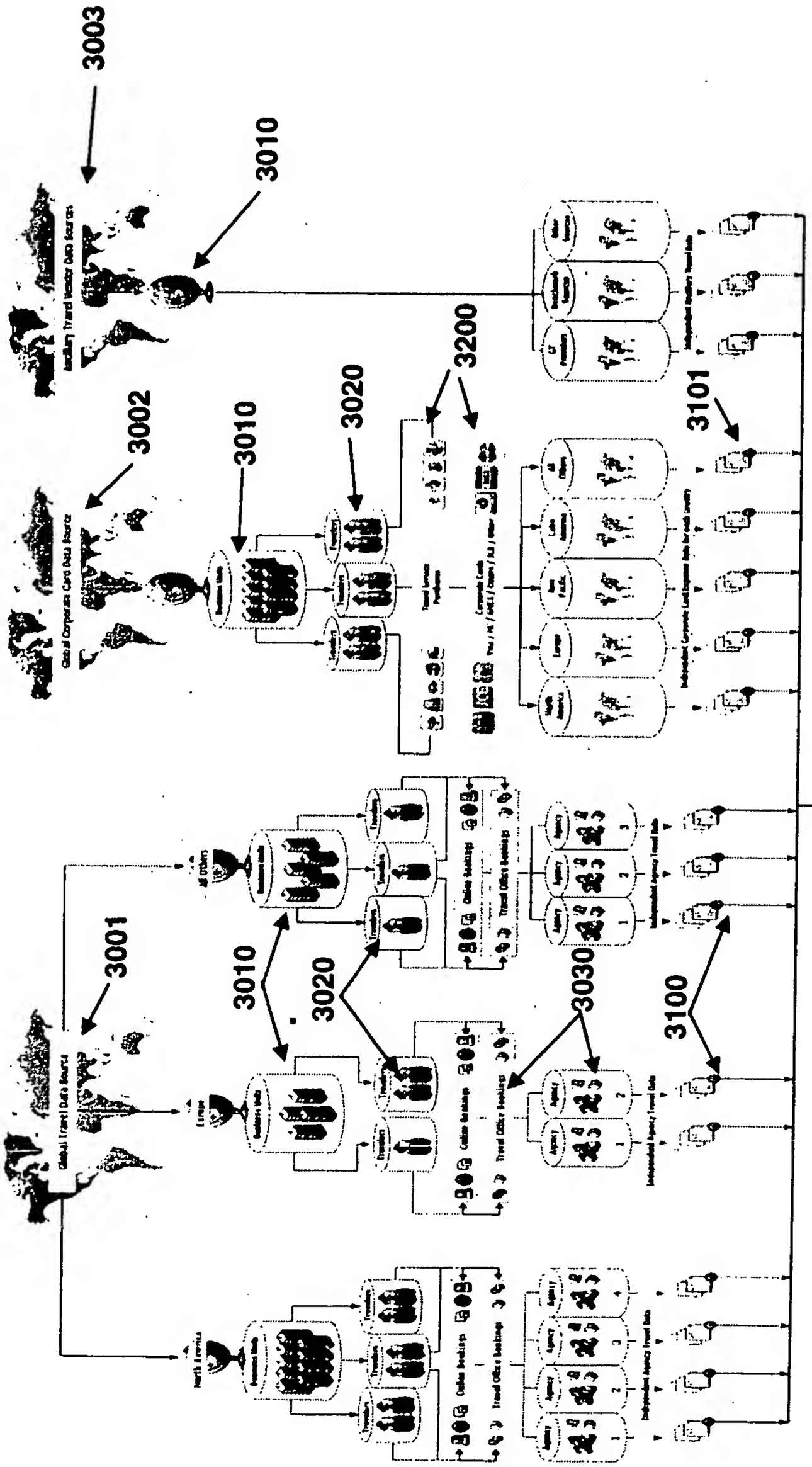

3003
3010
3002
3010
3020
3200
3101
3001
3010
3020
3030
3100
4001
7
3050

Figure 4

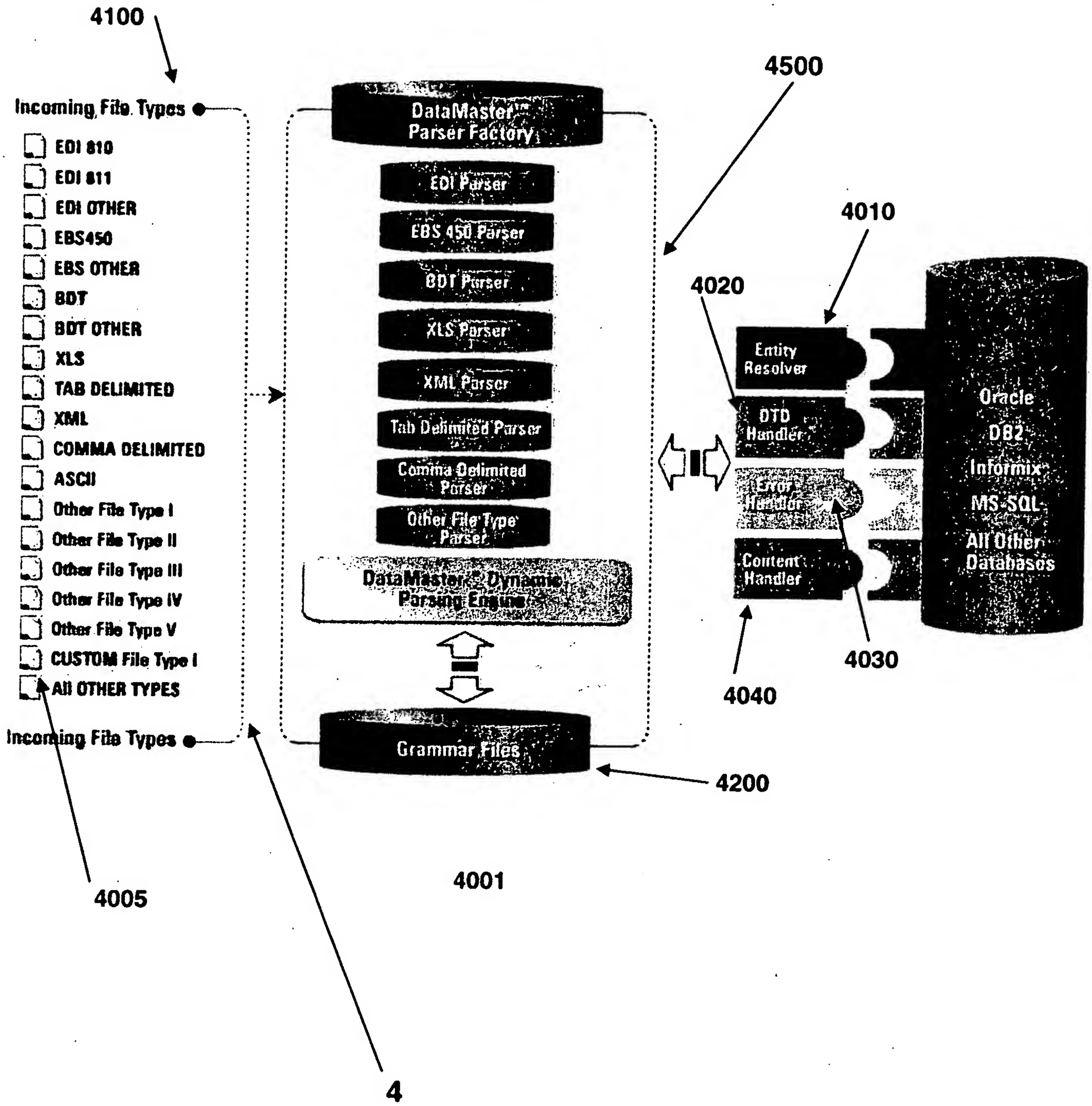

4100
Incoming File Types
EDI 810
EDI 811
EDI OTHER
EBS450
EBS OTHER
BDT
BDT OTHER
XLS
TAB DELIMITED
XML
COMMA DELIMITED
ASCII
Other File Type I
Other File Type II
Other File Type III
Other File Type IV
Other File Type V
CUSTOM File Type I
All OTHER TYPES
Incoming File Types
4005
DataMaster™ Parser Factory
EDI Parser
EBS 450 Parser
BDT Parser
XLS Parser
XML Parser
Tab Delimited Parser
Comma Delimited Parser
Other File Type Parser
DataMaster™ Dynamic Parsing Engine
Grammar Files
4200
4001
4500
4010
4020
Entity Resolver
DTD Handler
Error Handler
Content Handler
Oracle
DB2
Informix
MS-SQL
All Other Databases
4030
4040
4

Figure 5

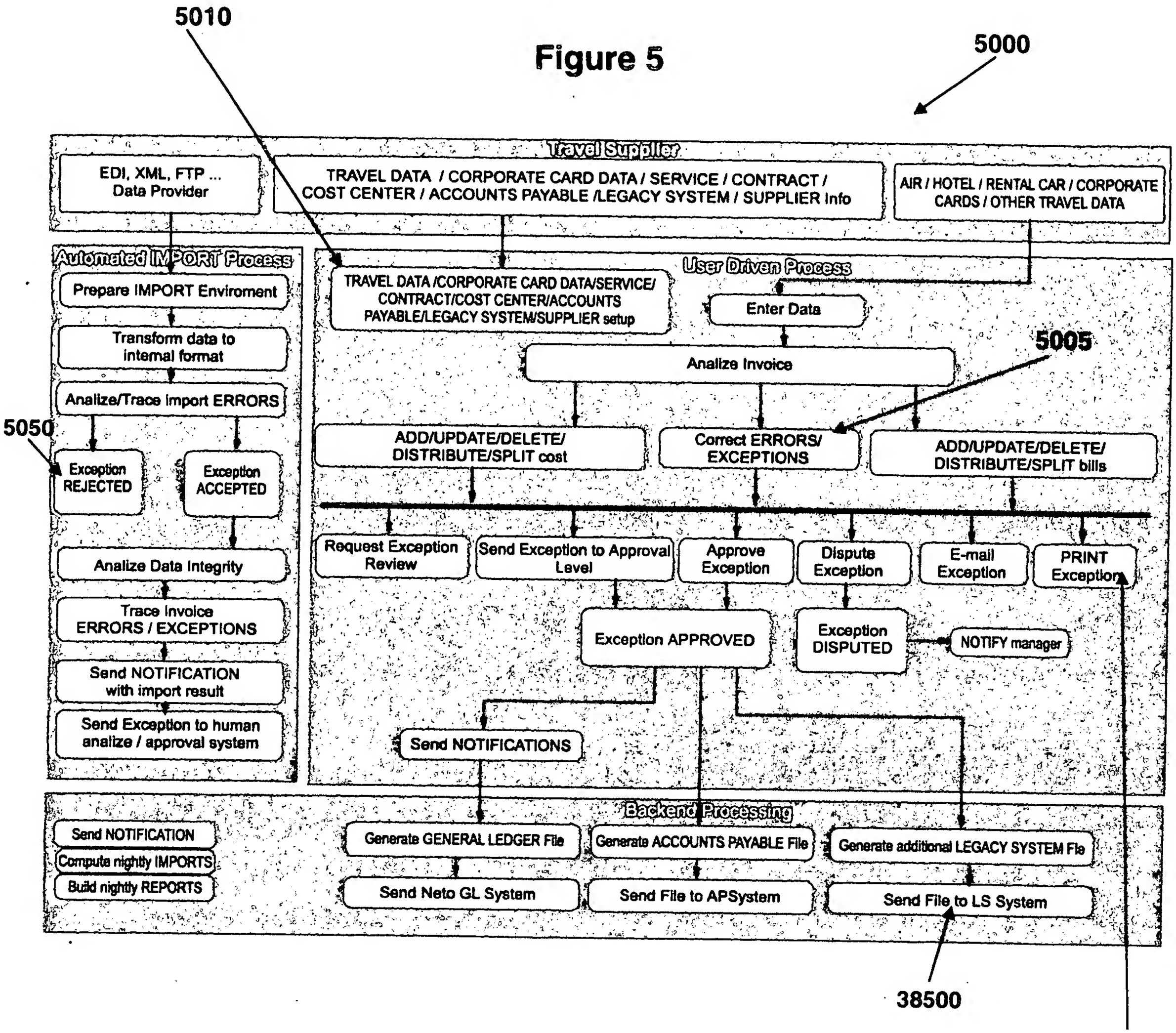

5010
5000
Travel Supplier
EDI, XML, FTP ...
Data Provider
TRAVEL DATA / CORPORATE CARD DATA / SERVICE / CONTRACT / COST CENTER / ACCOUNTS PAYABLE /LEGACY SYSTEM / SUPPLIER Info
AIR / HOTEL / RENTAL CAR / CORPORATE CARDS / OTHER TRAVEL DATA
Automated IMPORT Process
Prepare IMPORT Enviroment
Transform data to internal format
Analize/Trace Import ERRORS
5050
Exception REJECTED
Exception ACCEPTED
Analize Data Integrity
Trace Invoice ERRORS / EXCEPTIONS
Send NOTIFICATION with import result
Send Exception to human analize / approval system
User Driven Process
TRAVEL DATA /CORPORATE CARD DATA/SERVICE/ CONTRACT/COST CENTER/ACCOUNTS PAYABLE/LEGACY SYSTEM/SUPPLIER setup
Enter Data
Analize Invoice
5005
ADD/UPDATE/DELETE/ DISTRIBUTE/SPLIT cost
Correct ERRORS/ EXCEPTIONS
ADD/UPDATE/DELETE/ DISTRIBUTE/SPLIT bills
Request Exception Review
Send Exception to Approval Level
Approve Exception
Dispute Exception
E-mail Exception
PRINT Exception
Exception APPROVED
Exception DISPUTED
NOTIFY manager
Send NOTIFICATIONS
Backend Processing
Send NOTIFICATION
Compute nightly IMPORTS
Build nightly REPORTS
Generate GENERAL LEDGER File
Generate ACCOUNTS PAYABLE File
Generate additional LEGACY SYSTEM File
Send Neto GL System
Send File to APSystem
Send File to LS System
38500
11

Figure 6

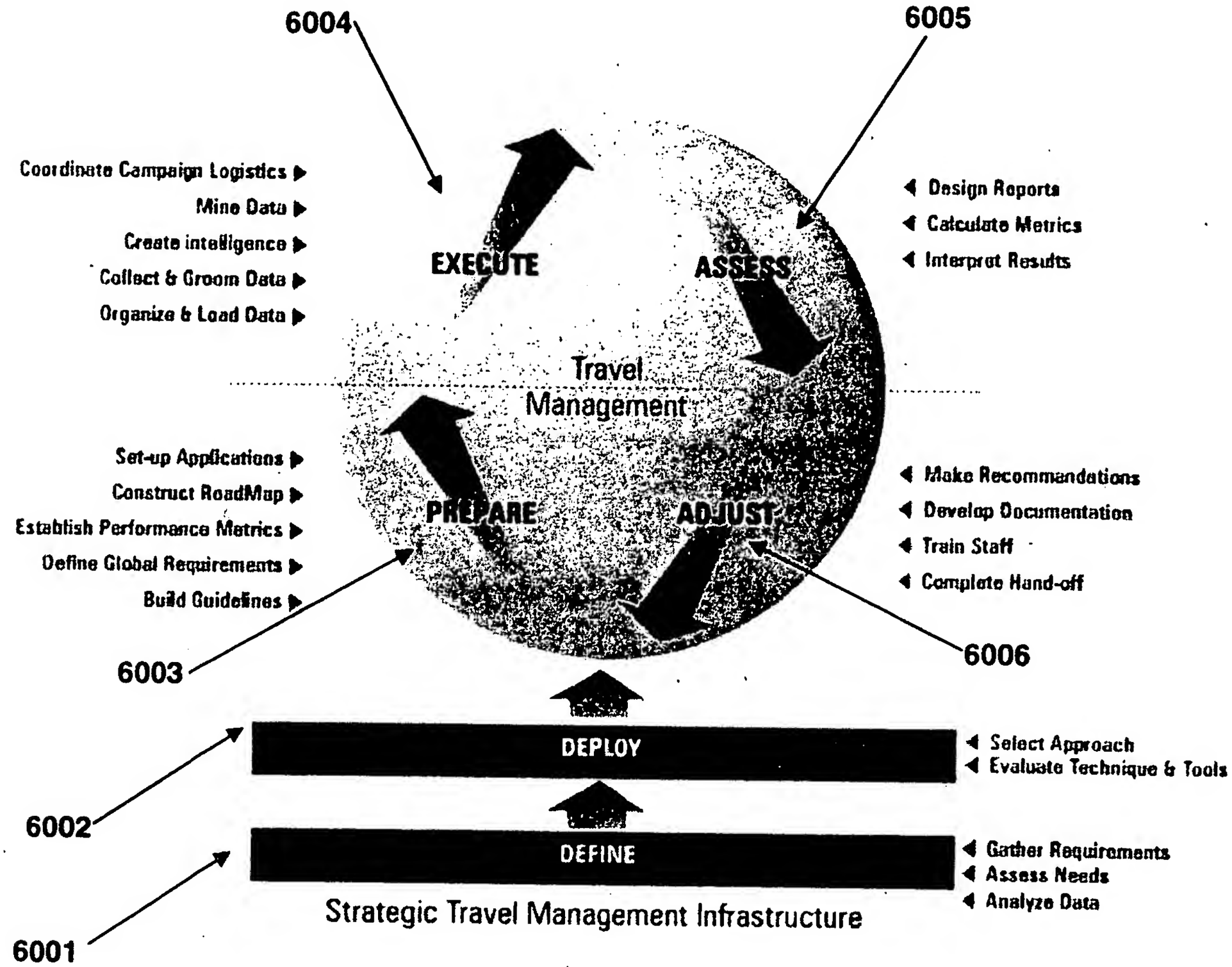

6004
6005
Coordinate Campaign Logistics
Mine Data
Create intelligence
Collect & Groom Data
Organize & Load Data
EXECUTE
ASSESS
Design Reports
Calculate Metrics
Interpret Results
Travel Management
Set-up Applications
Construct RoadMap
Establish Performance Metrics
Define Global Requirements
Build Guidelines
PREPARE
ADJUST
Make Recommendations
Develop Documentation
Train Staff
Complete Hand-off
6003
6006
DEPLOY
Select Approach
Evaluate Technique & Tools
6002
DEFINE
Gather Requirements
Assess Needs
Analyze Data
6001
Strategic Travel Management Infrastructure

Figure 7

Open Application Architecture

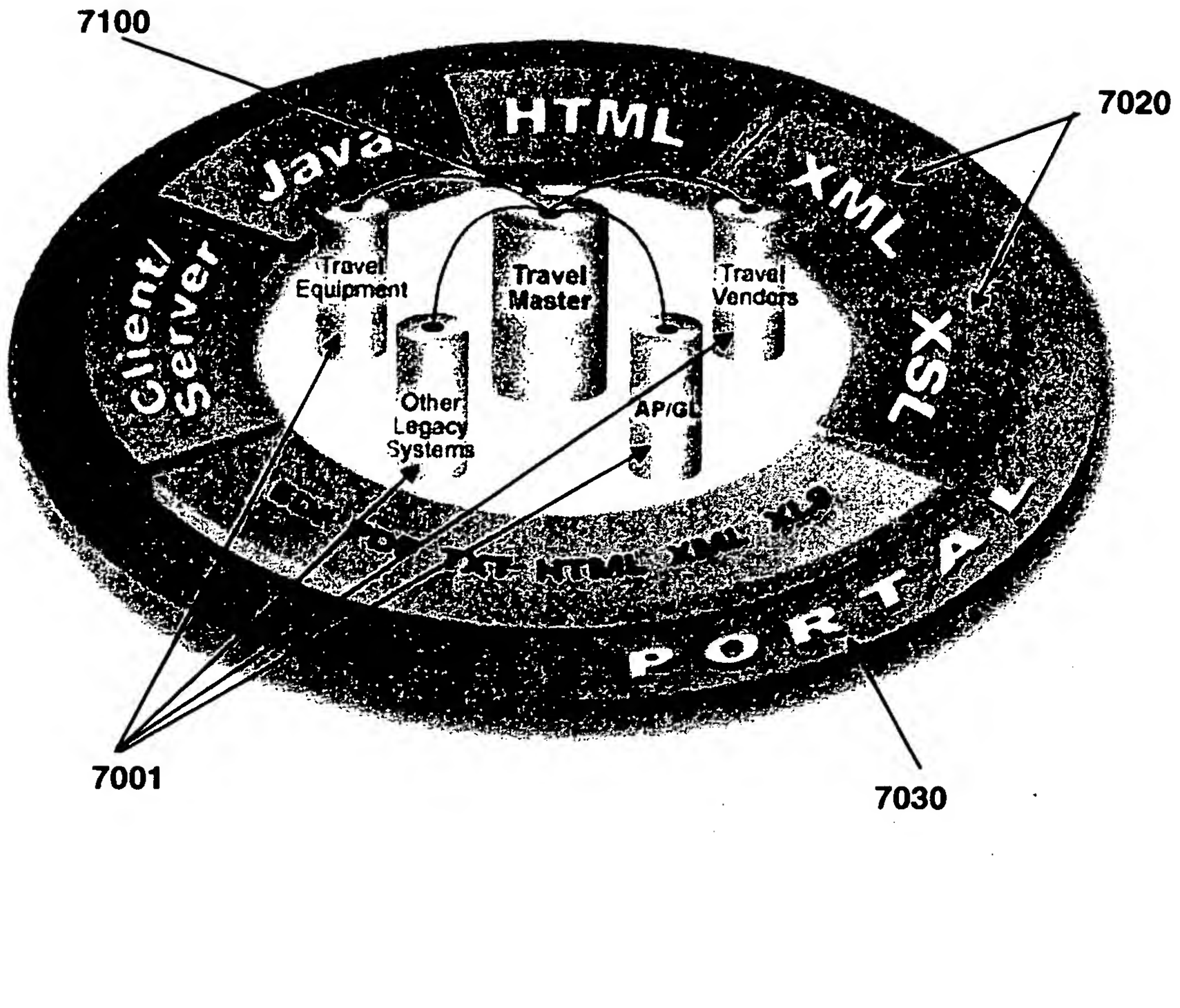


FIGURE 8

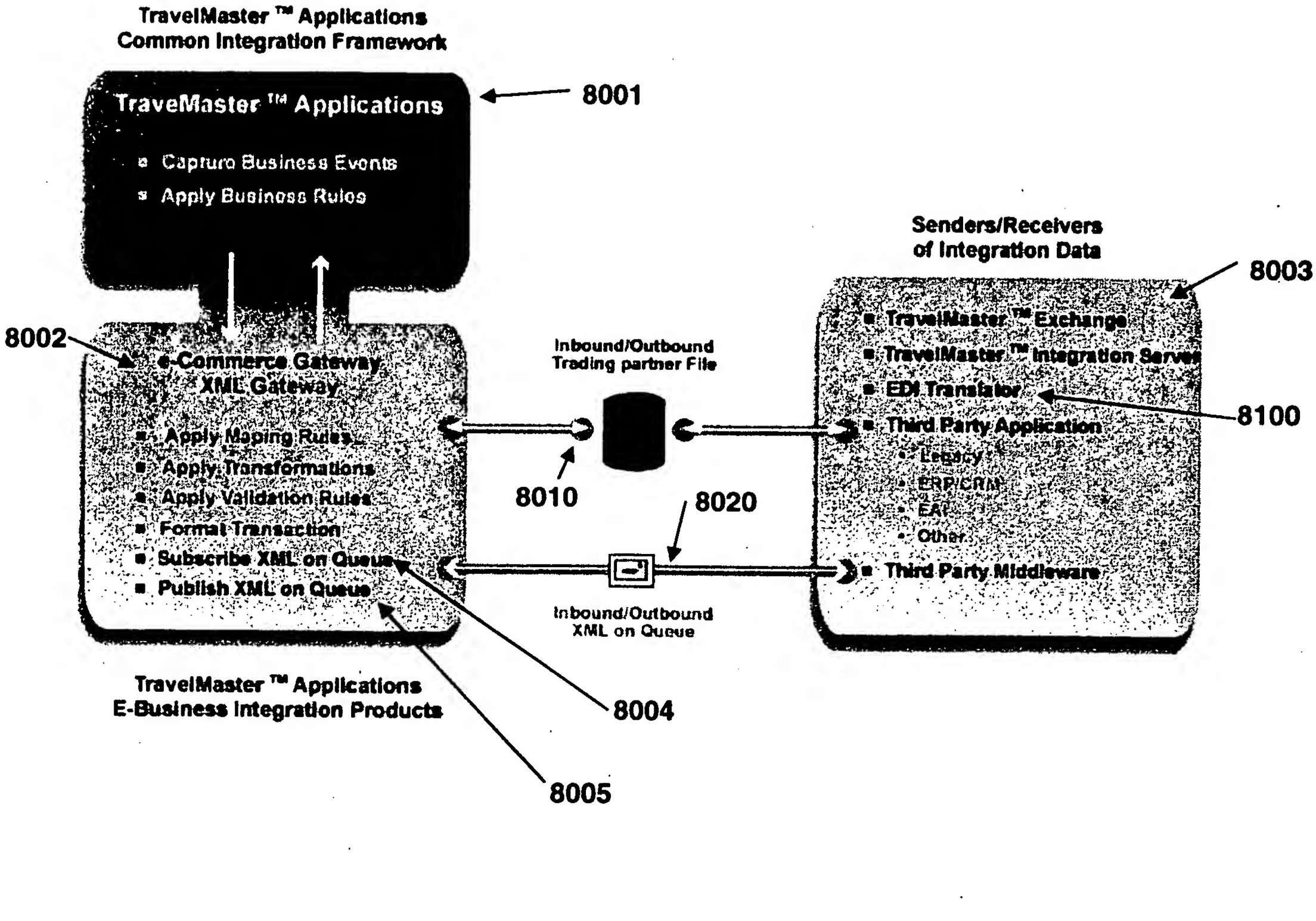

TravelMaster ™ Applications
Common Integration Framework
TraveMaster ™ Applications
Capture Business Events
Apply Business Rules
8001
8002
e-Commerce Gateway
XML Gateway
Apply Maping Rules
Apply Transformations
Apply Validation Rules
Format Transaction
Subscribe XML on Queue
Publish XML on Queue
Inbound/Outbound
Trading partner File
8010
8020
Inbound/Outbound
XML on Queue
Senders/Receivers
of Integration Data
8003
TravelMaster ™ Exchange
TravelMaster ™ Integration Server
EDI Translator
8100
Third Party Application
Legacy
ERP/CRM
EAI
Other
Third Party Middleware
TravelMaster ™ Applications
E-Business Integration Products
8004
8005

FIGURE 9

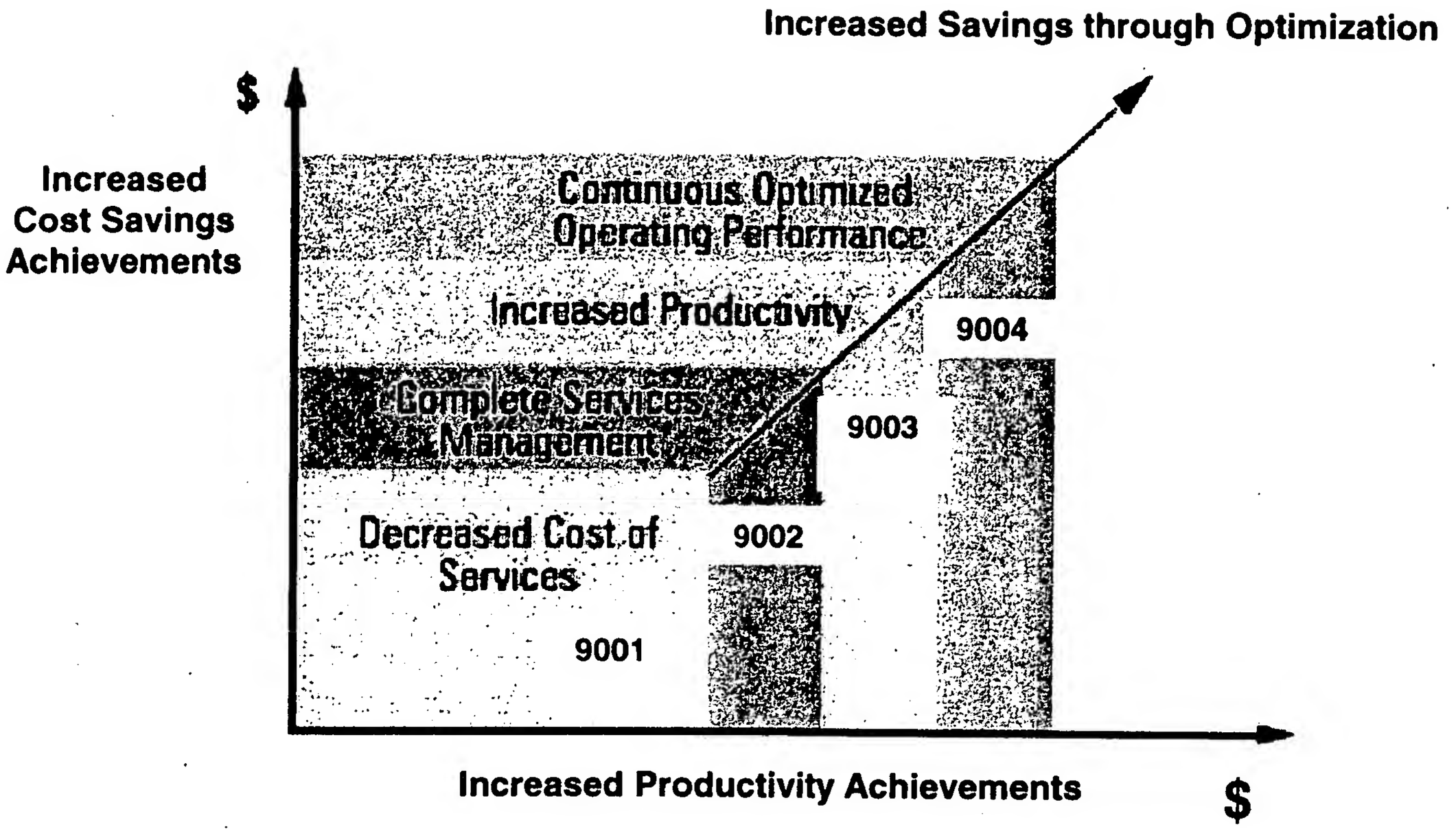

Increased Savings through Optimization
$
Increased Cost Savings Achievements
Continuous Optimized Operating Performance
Increased Productivity
Complete Services Management
Decreased Cost of Services
9001
9002
9003
9004
Increased Productivity Achievements
$

FIGURE 10

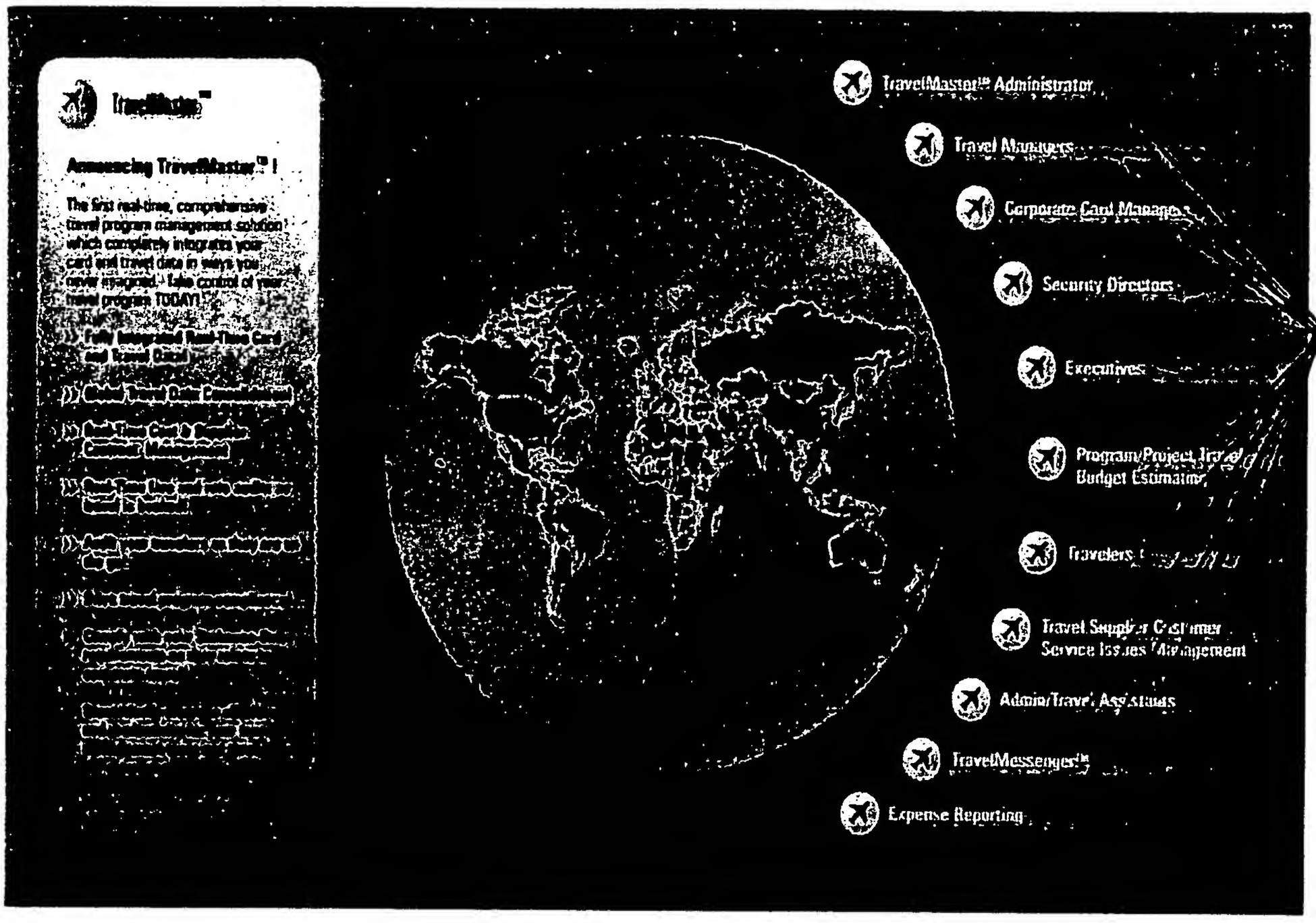
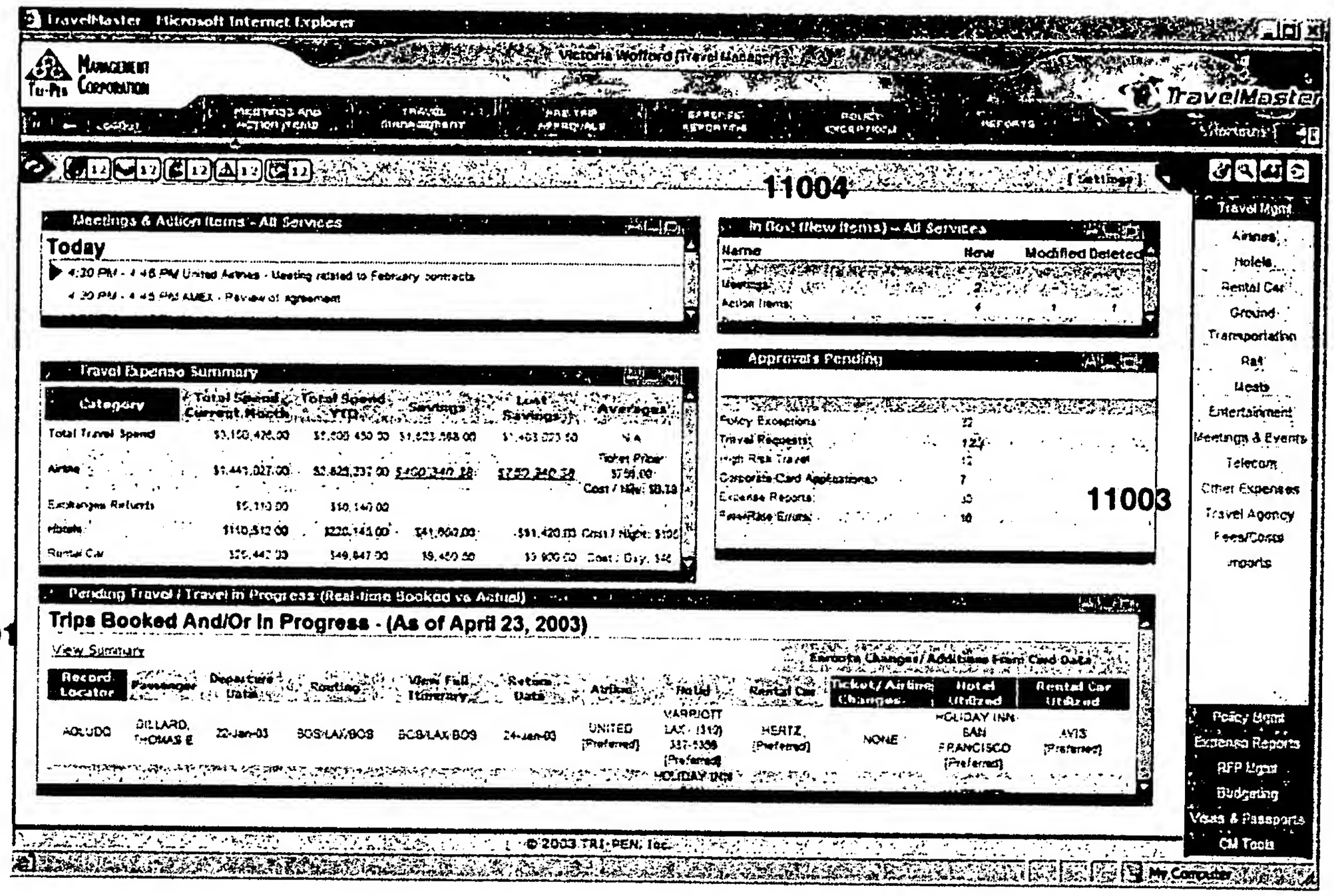

TravelMaster™ Administrator
Travel Managers
Corporate Card Manager
Security Directors
Executives
Program/Project Travel Budget Estimates
Travelers
Travel Supplier Customer Service Issues Management
Admin/Travel Assistants
TravelMessenger™
Expense Reporting
10001

FIGURE 11



11000

FIGURE 12

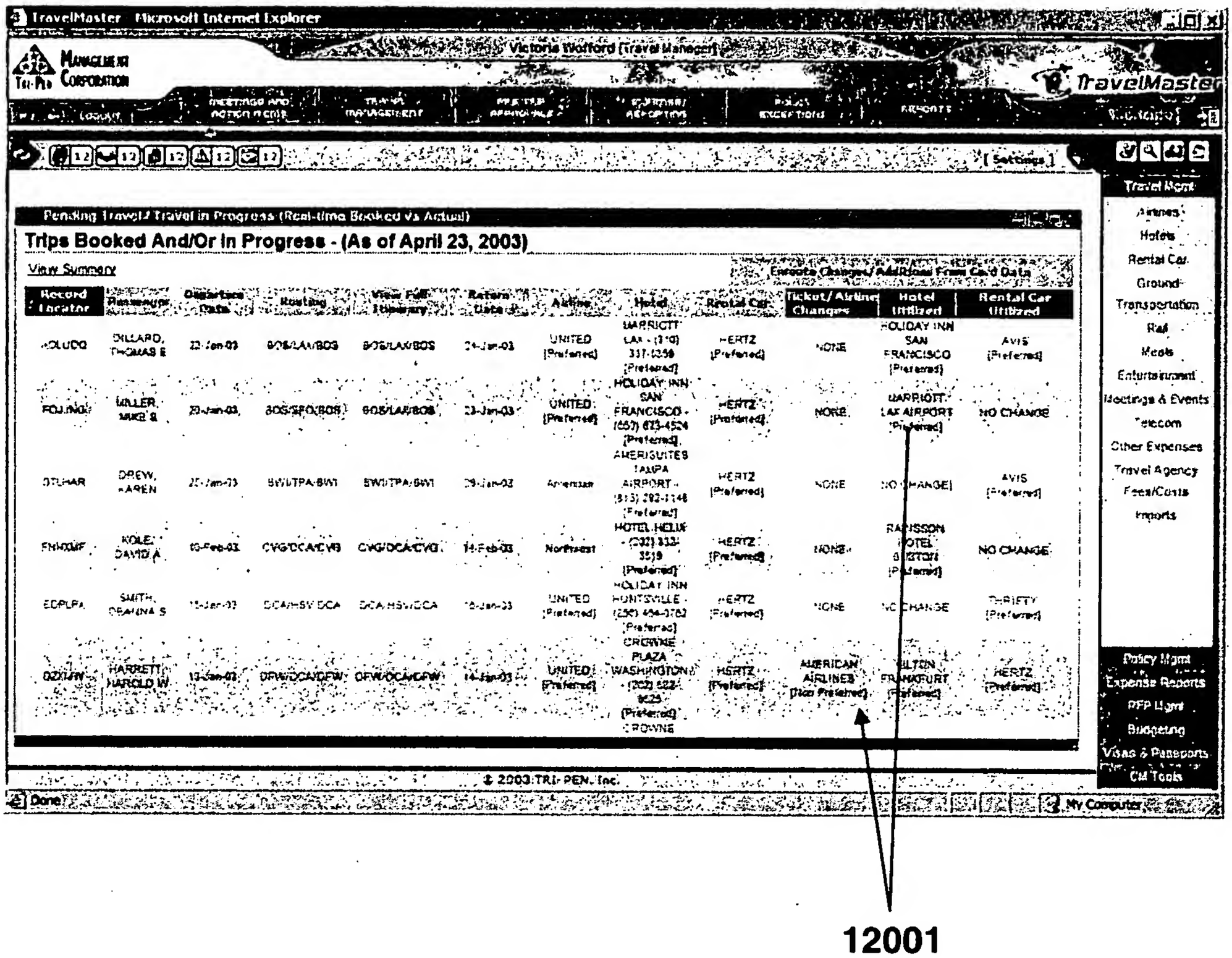

TravelMaster - Microsoft Internet Explorer
Victoria Watford (Travel Manager)
TravelMaster
Pending Travel / Travel in Progress (Real-time Booked vs Actual)
Trips Booked And/Or In Progress - (As of April 23, 2003)
View Summary
Execute Changes/ Additional Front Card Data
Record Locator
Passenger
Departure Date
Routing
View Full Itinerary
Return Date
Airline
Hotel
Rental Car
Ticket/ Airline Changes
Hotel Utilized
Rental Car Utilized
Travel Mgmt
Airfares
Hotels
Rental Car
Ground Transportation
Rail
Meals
Entertainment
Meetings & Events
Telecom
Other Expenses
Travel Agency Fees/Costs
Imports
Policy Mgmt
Expense Reports
PFP Mgmt
Budgeting
Visas & Passports
CM Tools
© 2003 TRIP PEN, Inc.
Done
My Computer
12001

FIGURE 13

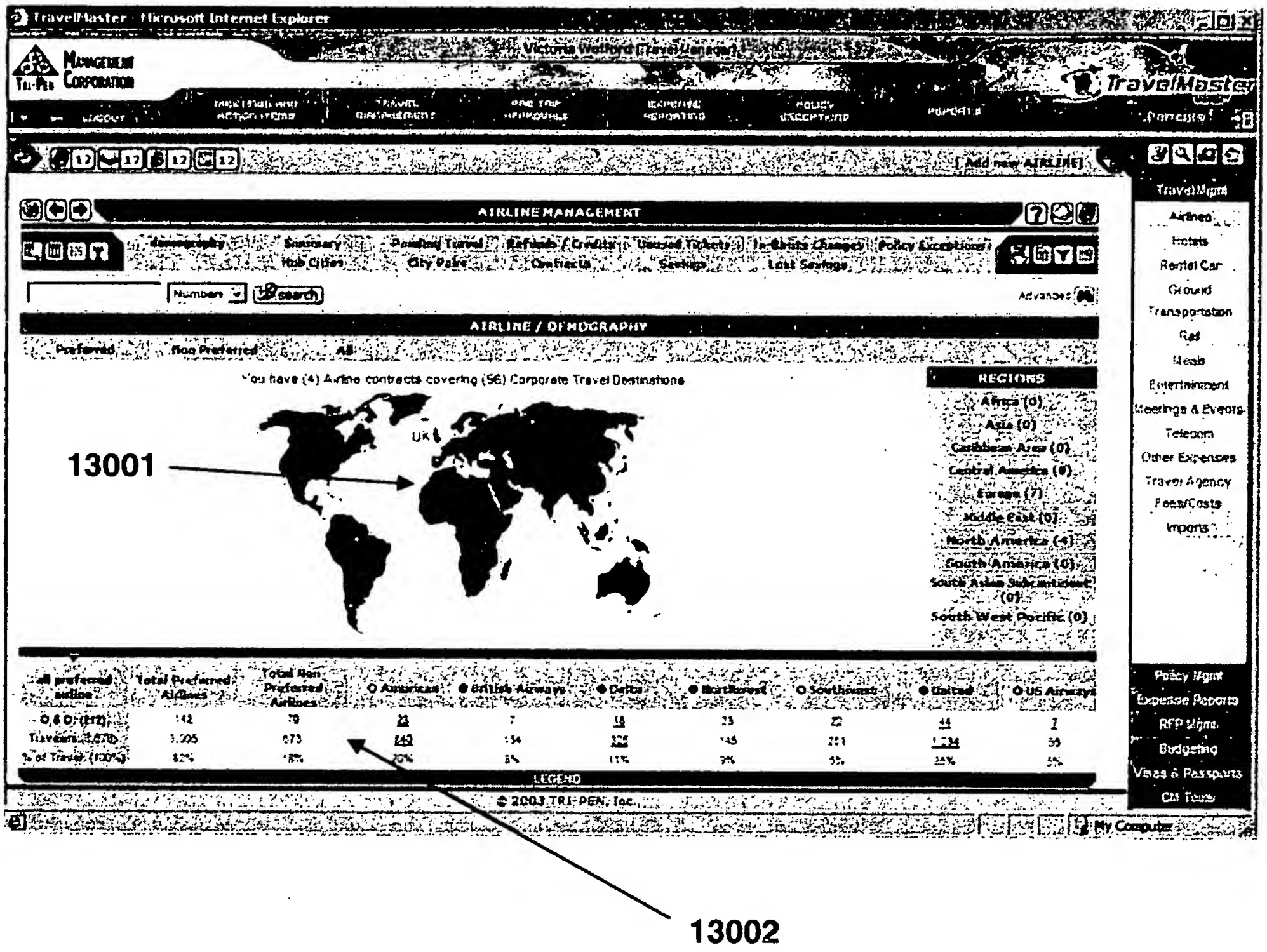

AIRLINE MANAGEMENT
AIRLINE / DEMOGRAPHY
REGIONS
13001
13002

FIGURE 14

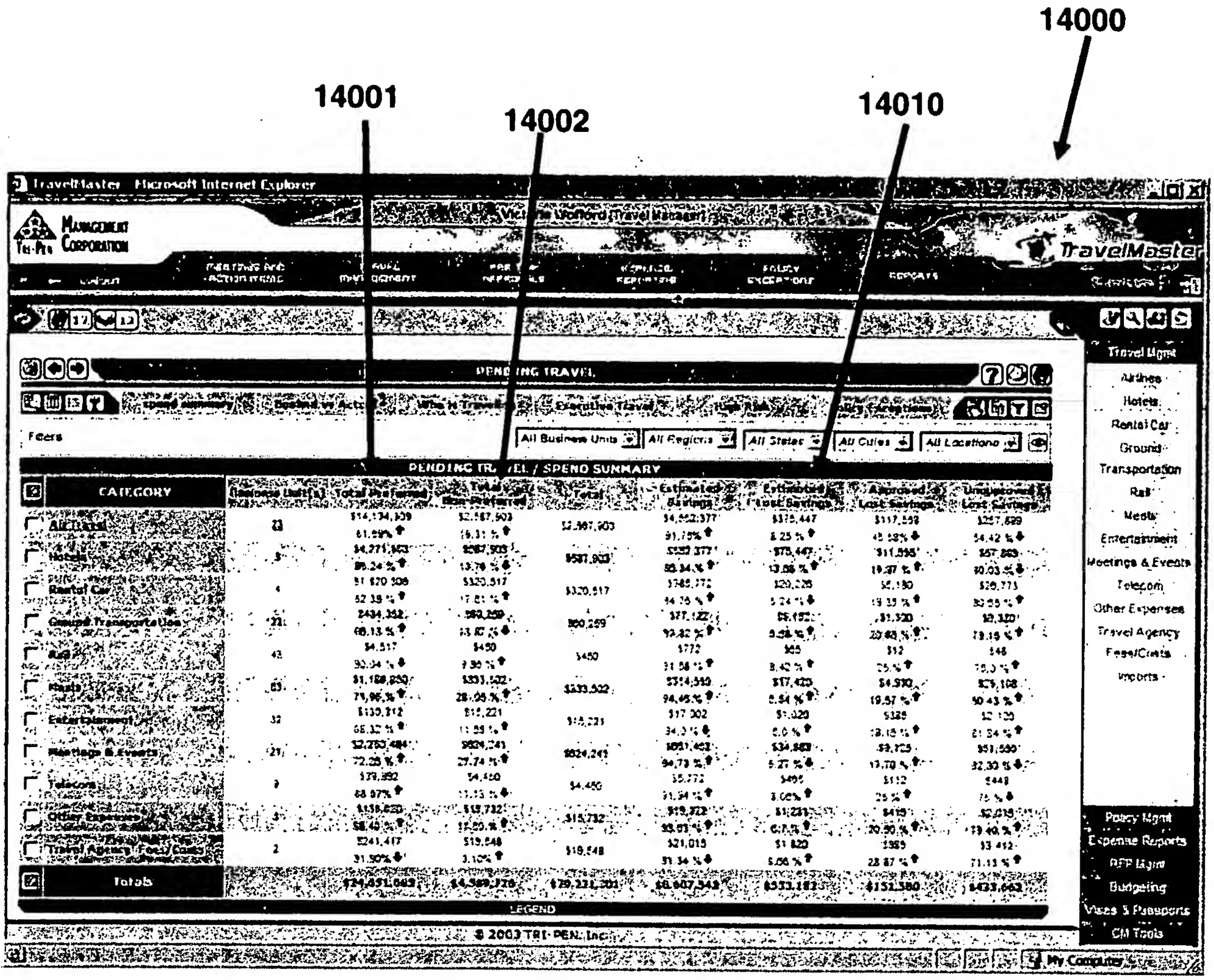

14000
14001
14002
14010
TravelMaster
PENDING TRAVEL
PENDING TRAVEL / SPEND SUMMARY
CATEGORY
Totals
LEGEND
Airlines
Hotels
Rental Car
Ground
Transportation
Rail
Meals
Entertainment
Meetings & Events
Telecom
Other Expenses
Travel Agency
Fees/Costs
Imports
Policy Mgmt
Expense Reports
RFP Mgmt
Budgeting
Visas & Passports
CM Tools

FIGURE 15

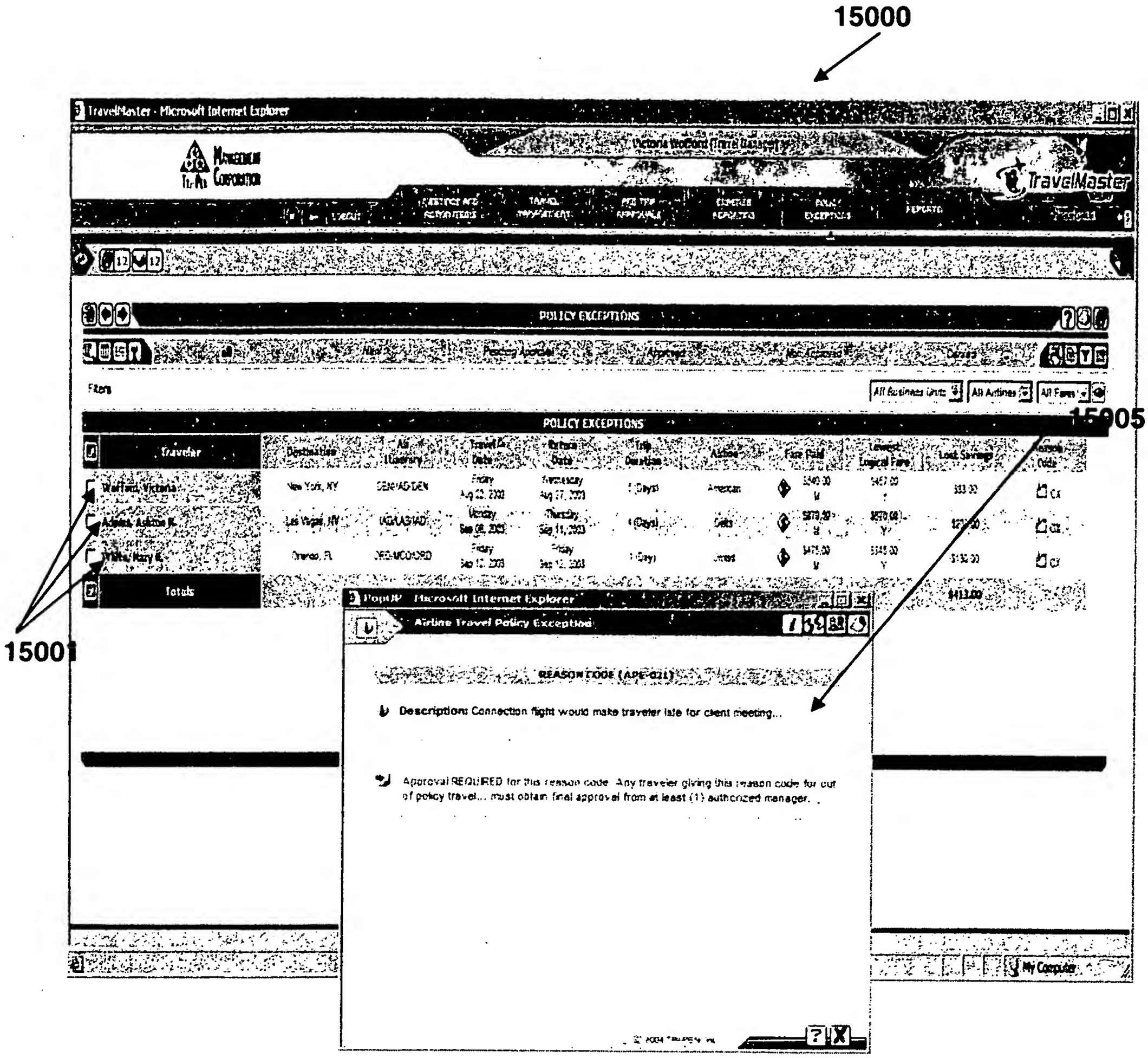
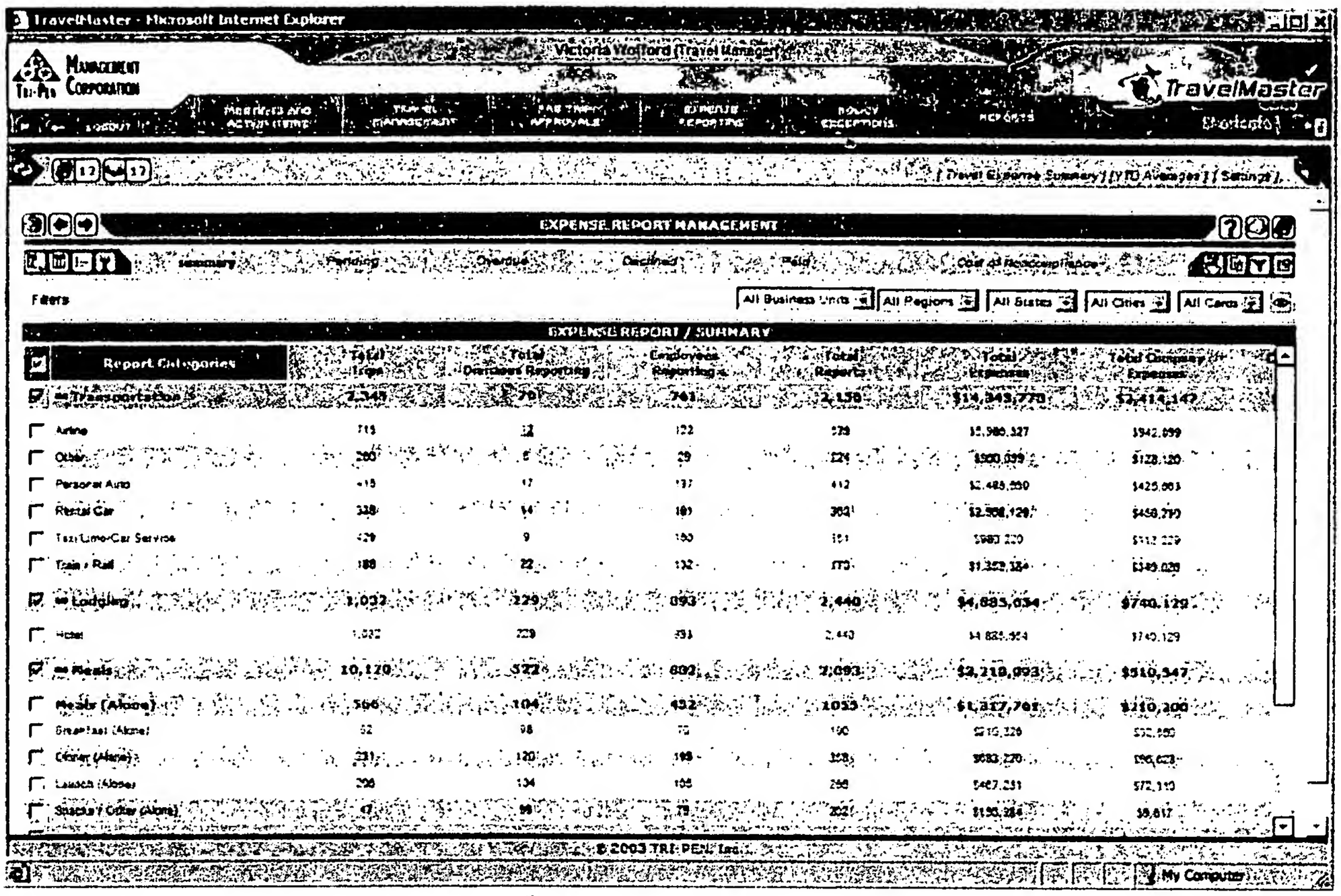
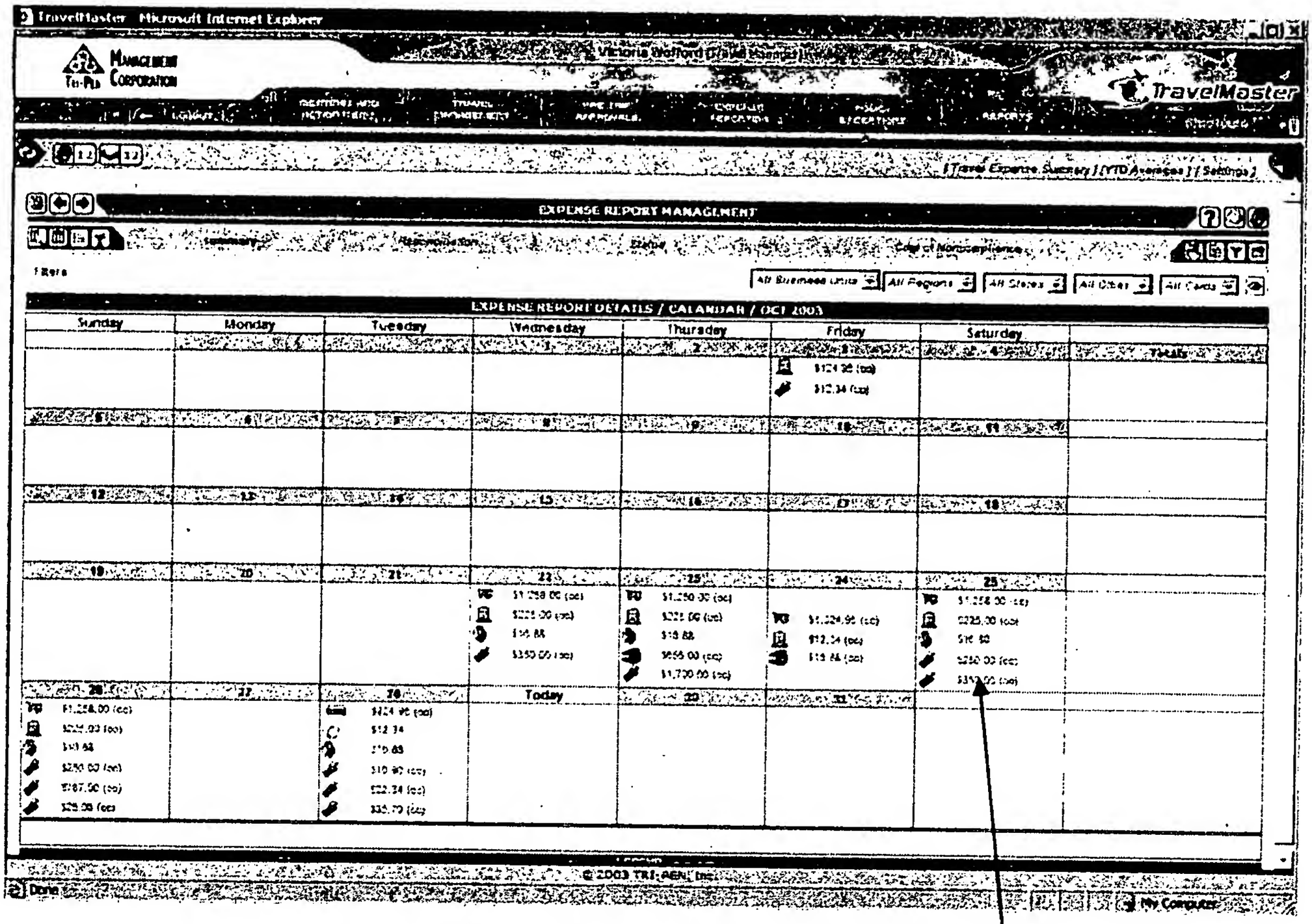

15000
TravelMaster - Microsoft Internet Explorer
TravelMaster
POLICY EXCEPTIONS
POLICY EXCEPTIONS
Traveler
Totals
15001
15005
Airline Travel Policy Exceptions
REASON CODE (APE-011)
Description: Connection flight would make traveler late for client meeting...
Approval REQUIRED for this reason code. Any traveler giving this reason code for out of policy travel... must obtain final approval from at least (1) authorized manager.
My Computer

FIGURE 16



16001

FIGURE 17



17005

17001

FIGURE 18

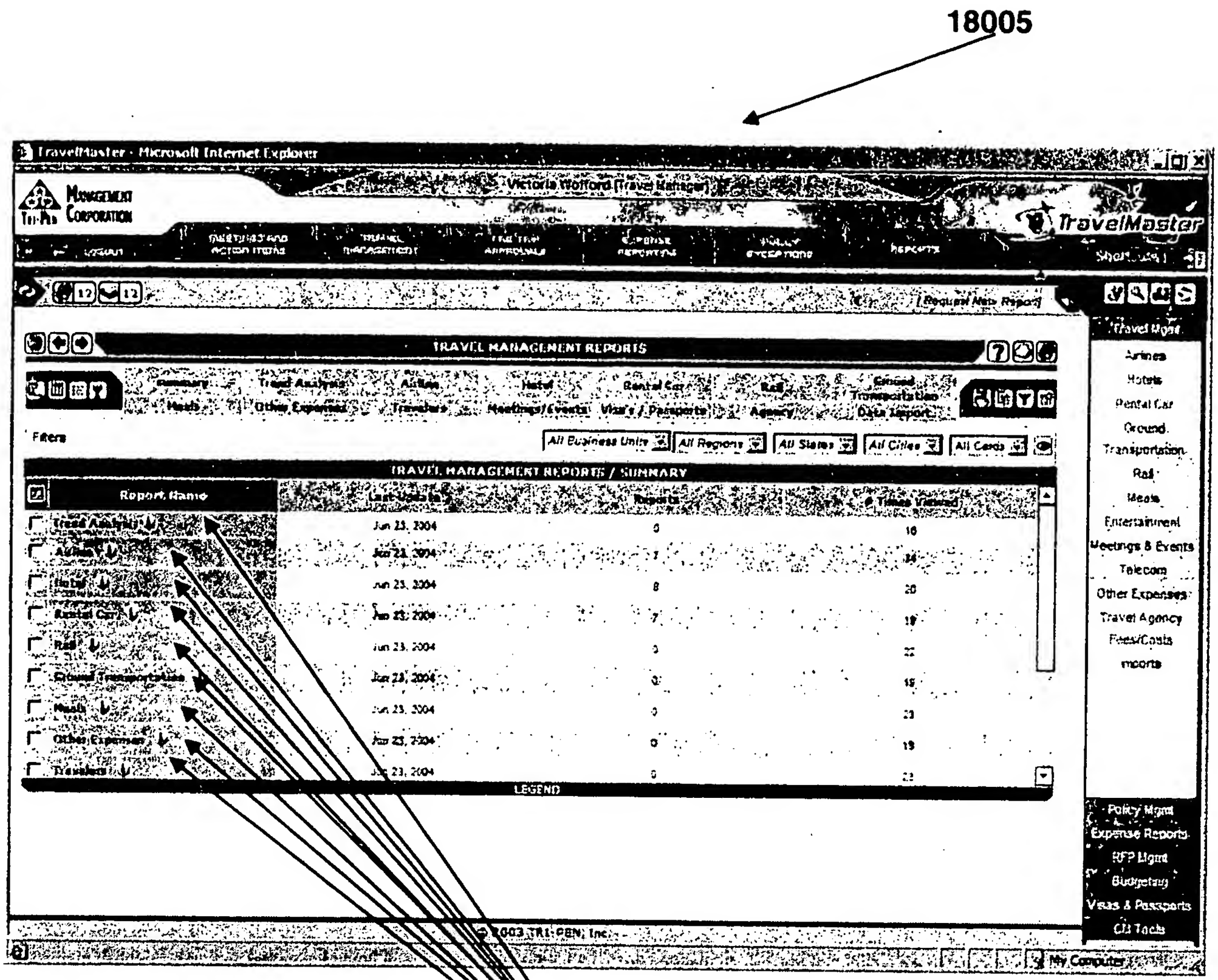

18005
TravelMaster - Microsoft Internet Explorer
Victoria Wofford (Travel Manager)
TravelMaster
TRAVEL MANAGEMENT REPORTS
Summary
Travel Analysis
Airline
Hotel
Rental Car
Rail
Ground Transportation
Meals
Other Expenses
Travelers
Meetings/Events
Visa's / Passports
Agency
Data Import
Filters
All Business Units
All Regions
All States
All Cities
All Cards
TRAVEL MANAGEMENT REPORTS / SUMMARY
Report Name
Last Update
Reports
Times Viewed
Jun 23, 2004
LEGEND
Airlines
Hotels
Rental Car
Ground Transportation
Rail
Meals
Entertainment
Meetings & Events
Telecom
Other Expenses
Travel Agency
Fees/Costs
Policy Mgmt
Expense Reports
RFP Mgmt
Budgetary
Visas & Passports
CB Tools
2003 TRI-PEN, Inc.
My Computer
18001

FIGURE 19

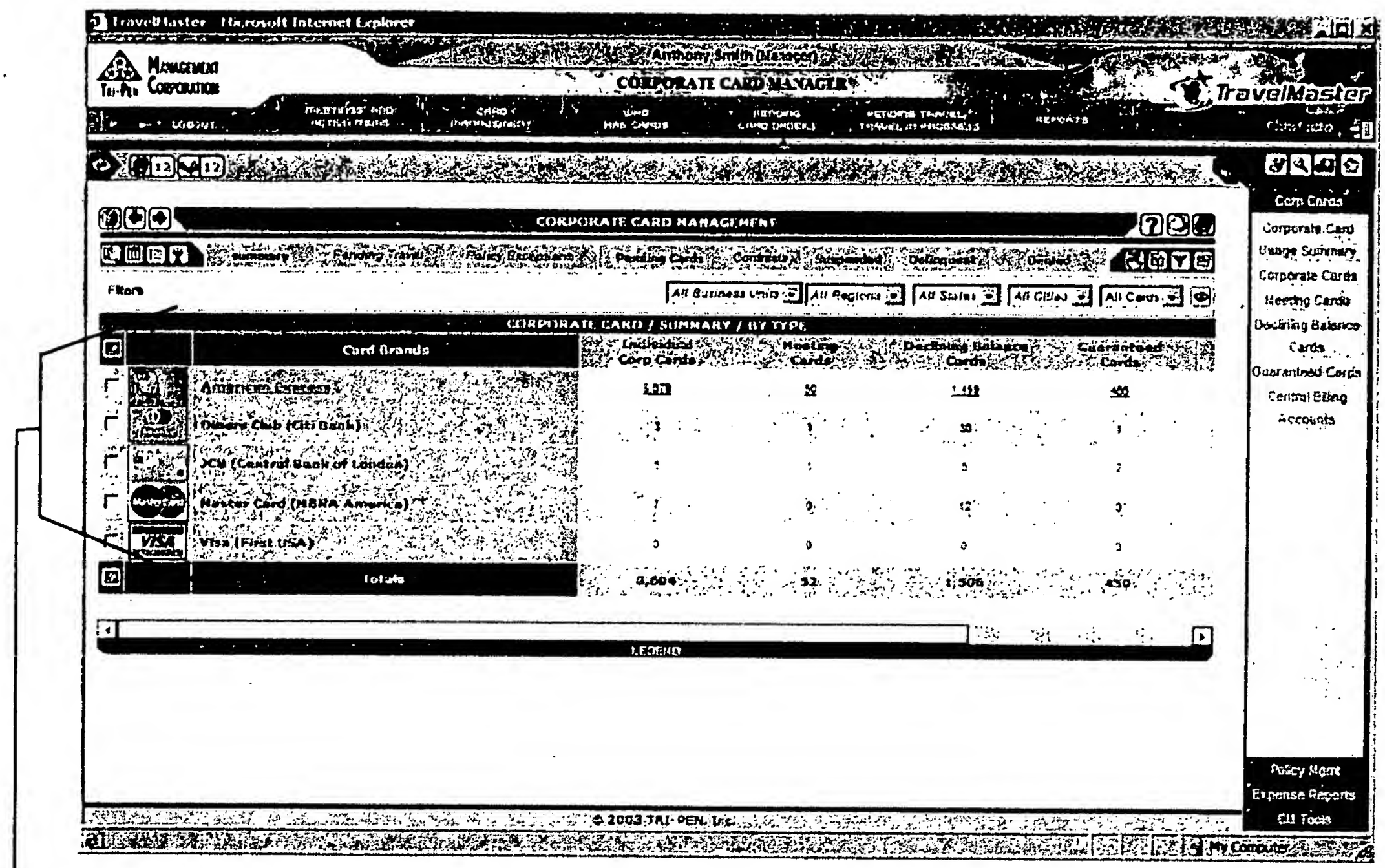

19000
TravelMaster
CORPORATE CARD MANAGER
CORPORATE CARD MANAGEMENT
Summary
Pending Cards
Policy Exceptions
Suspended
Delinquent
Denied
Filters
CORPORATE CARD / SUMMARY / BY TYPE
Card Brands
Individual Corp Cards
Meeting Cards
Declining Balance Cards
Guaranteed Cards
American Express
Diners Club (Citi Bank)
JCB (Central Bank of London)
Master Card (MBNA America)
Visa (First USA)
Totals
LEGEND
Corp Cards
Corporate Card Usage Summary
Corporate Cards
Meeting Cards
Declining Balance Cards
Guaranteed Cards
Central Billing Accounts
Policy Mgmt
Expense Reports
CM Tools
© 2003 TRI-PEN, Inc.
My Computer
19001

FIGURE 20

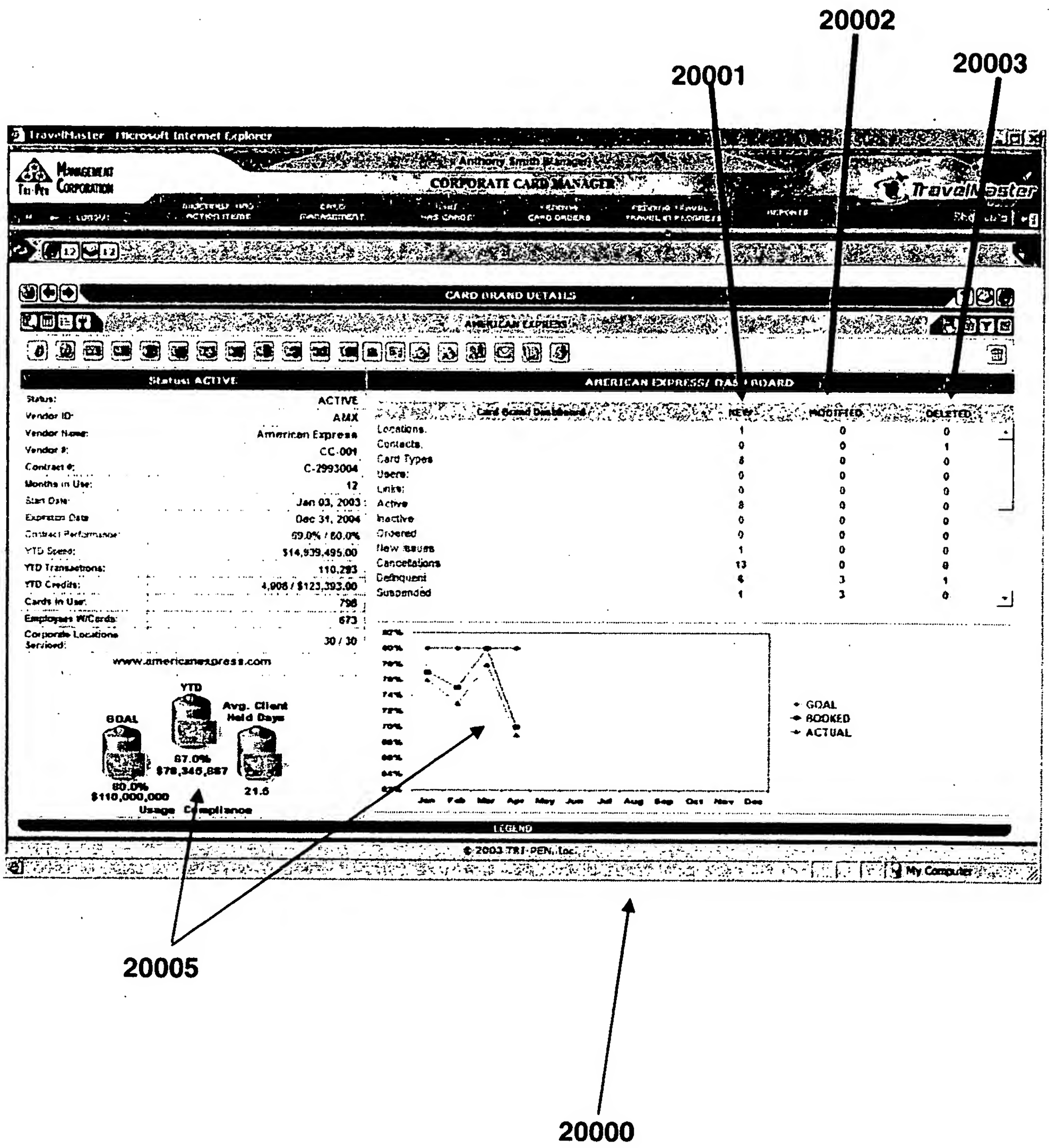

20001
20002
20003
TravelMaster Microsoft Internet Explorer
CORPORATE CARD MANAGER
CARD BRAND DETAILS
AMERICAN EXPRESS
Status: ACTIVE
AMERICAN EXPRESS/ DASHBOARD
Status: ACTIVE
Vendor ID: AMX
Vendor Name: American Express
Vendor #: CC-001
Contract #: C-2993004
Months in Use: 12
Start Date: Jan 03, 2003
Expiration Date: Dec 31, 2004
YTD Sales: $14,939,495.00
YTD Transactions: 110,283
YTD Credits: 4,906 / $123,393.00
Cards in Use: 796
Employees W/Cards: 673
Corporate Locations Serviced: 30 / 30
www.americanexpress.com
Card Board Dashboard
NEW
MODIFIED
DELETED
Locations 1 0 0
Contacts 0 0 1
Card Types 8 0 0
Users 0 0 0
Links 0 0 0
Active 8 0 0
Inactive 0 0 0
Ordered 0 0 0
New Issues 1 0 0
Cancelations 13 0 8
Delinquent 6 3 1
Suspended 1 3 0
YTD
Avg. Client Held Days
GOAL
67.0%
$78,345,887
80.0%
$110,000,000
21.6
Usage Compliance
GOAL
BOOKED
ACTUAL
LEGEND
© 2003 TRI-PEN, Inc.
My Computer
20005
20000

FIGURE 21

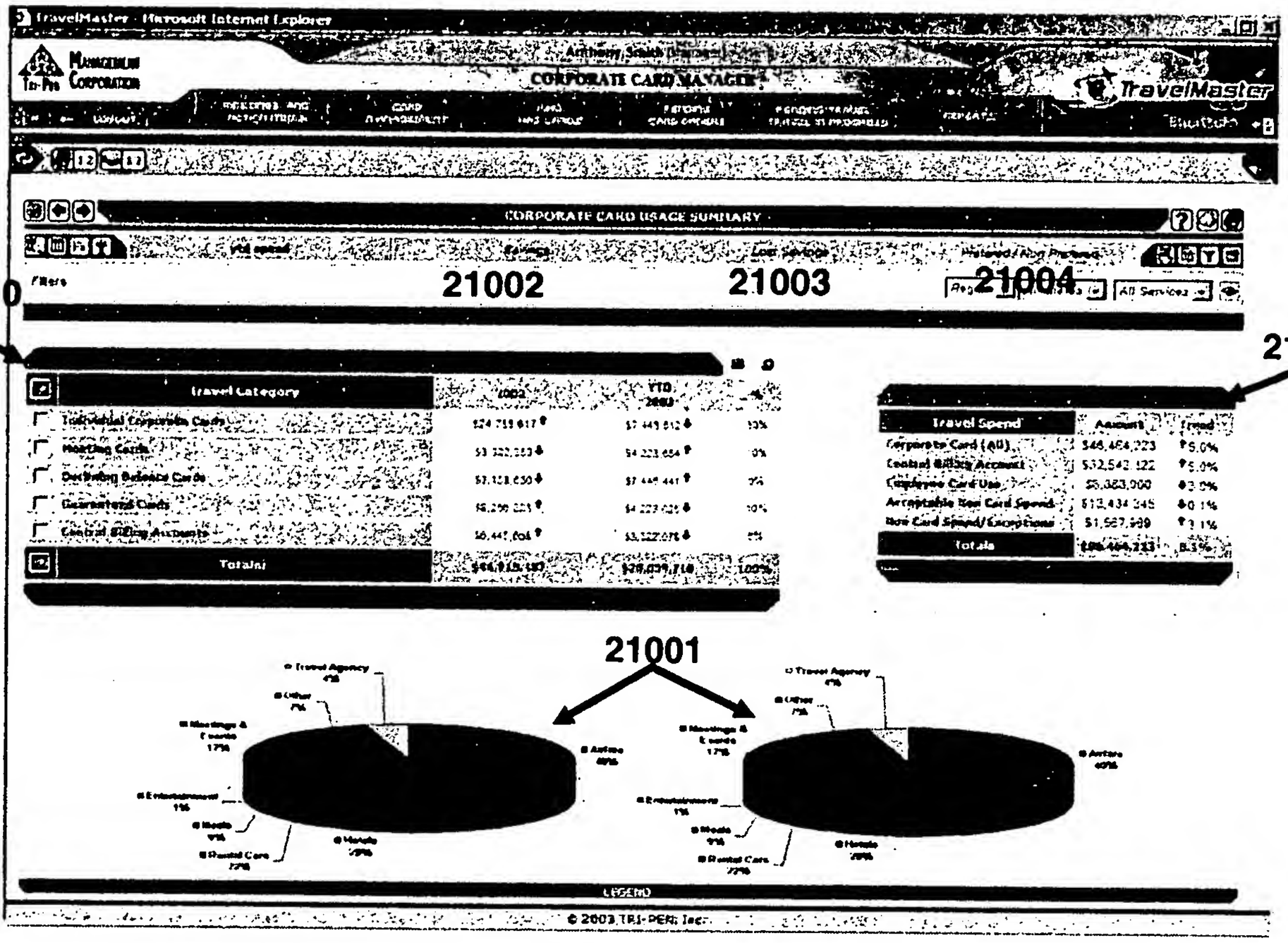

TravelMaster - Microsoft Internet Explorer
CORPORATE CARD MANAGER
TravelMaster
CORPORATE CARD USAGE SUMMARY
21010
21002
21003
21004
21020
Travel Category
Travel Spend
Amount
Trend
21001
LEGEND
© 2003 TRI-PER Inc.

FIGURE 22

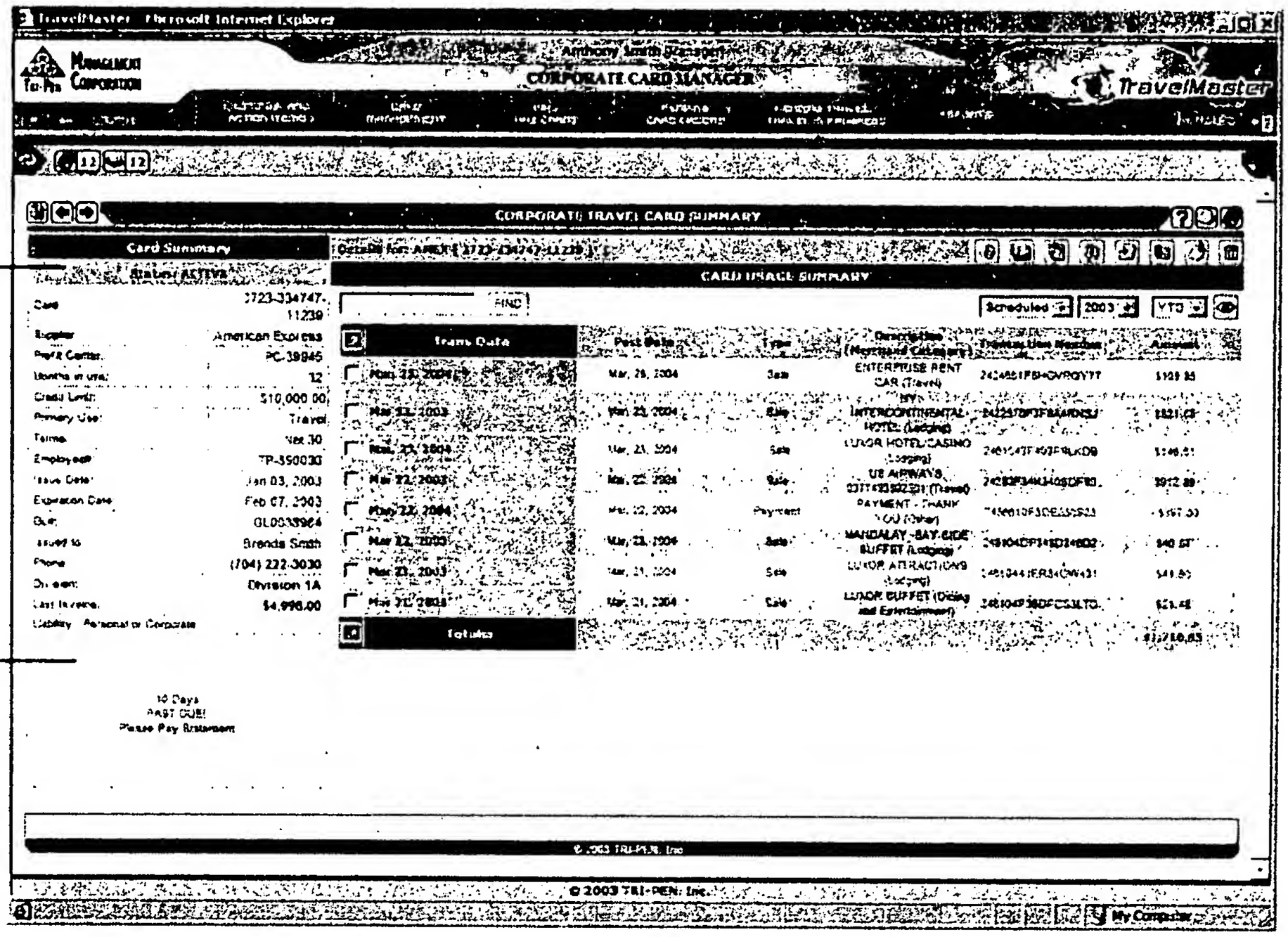

CORPORATE CARD MANAGER
TravelMaster
CORPORATE TRAVEL CARD SUMMARY
Card Summary
CARD USAGE SUMMARY
Trans Date
Post Date
Type
Description
Amount
22001

FIGURE 23

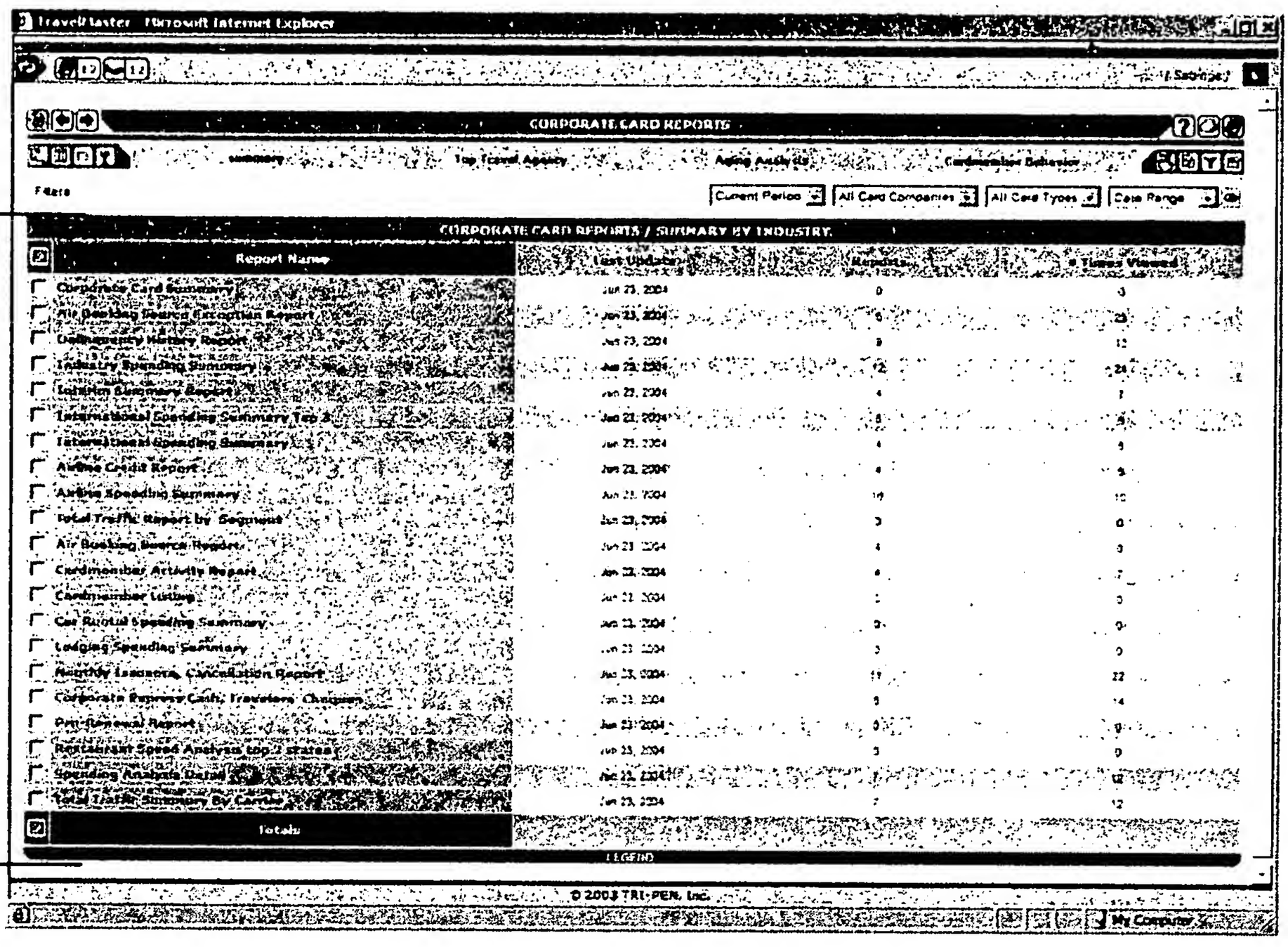
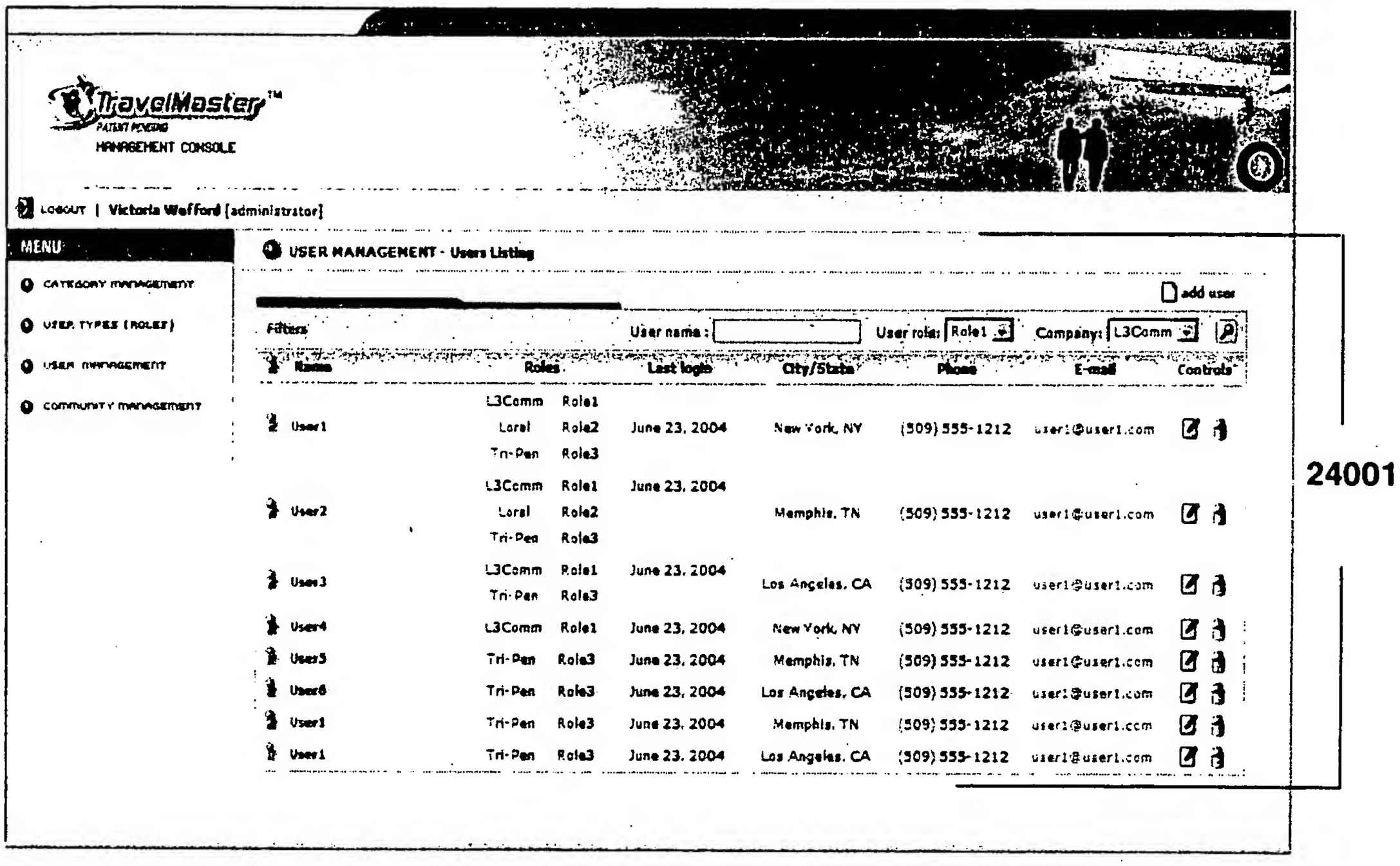
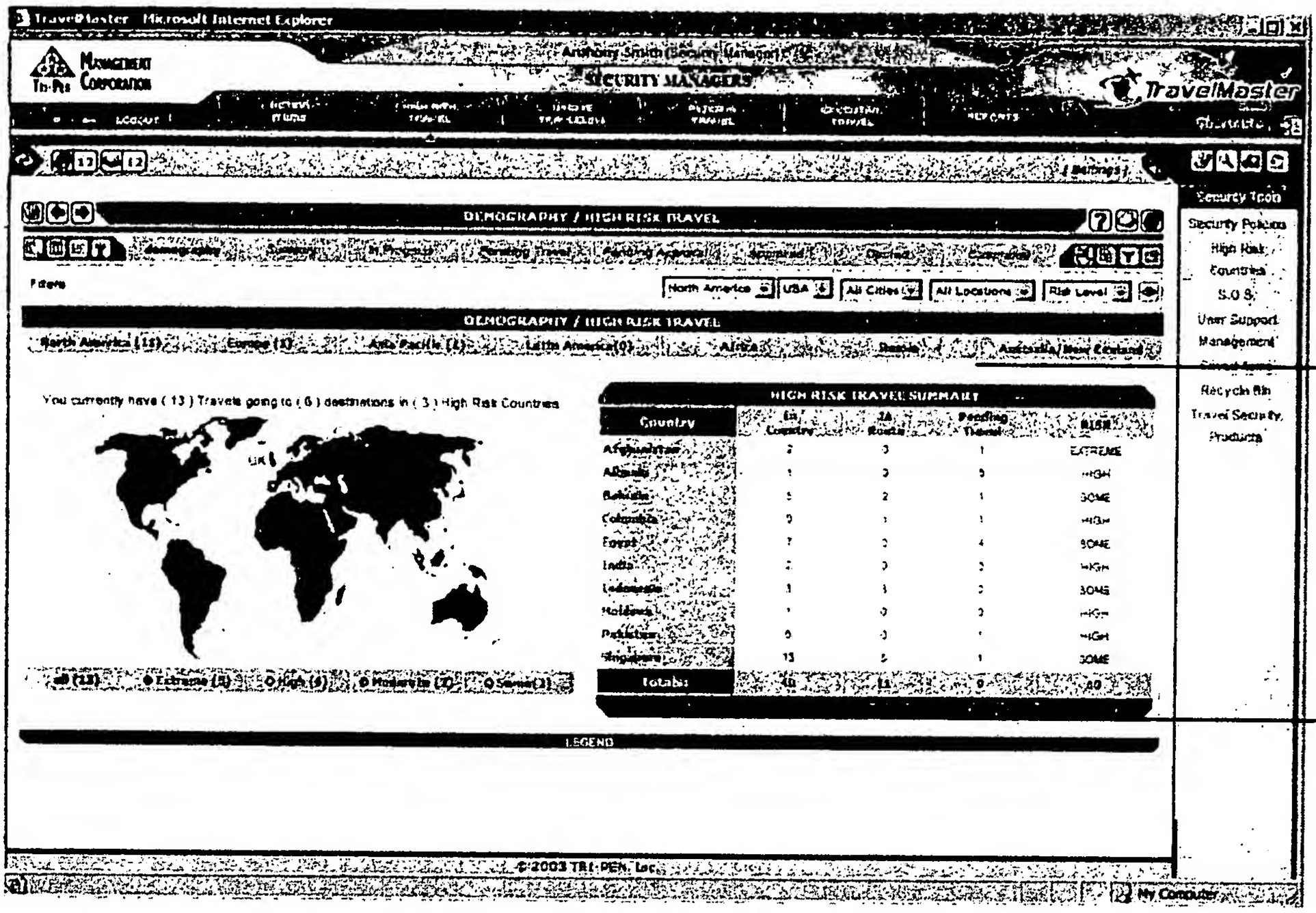

CORPORATE CARD REPORTS
CORPORATE CARD REPORTS / SUMMARY BY INDUSTRY
Report Name
Last Updated
Reports
Times Viewed
Totals
LEGEND
© 2003 TRI-PEN, Inc.
23001

FIGURE 24



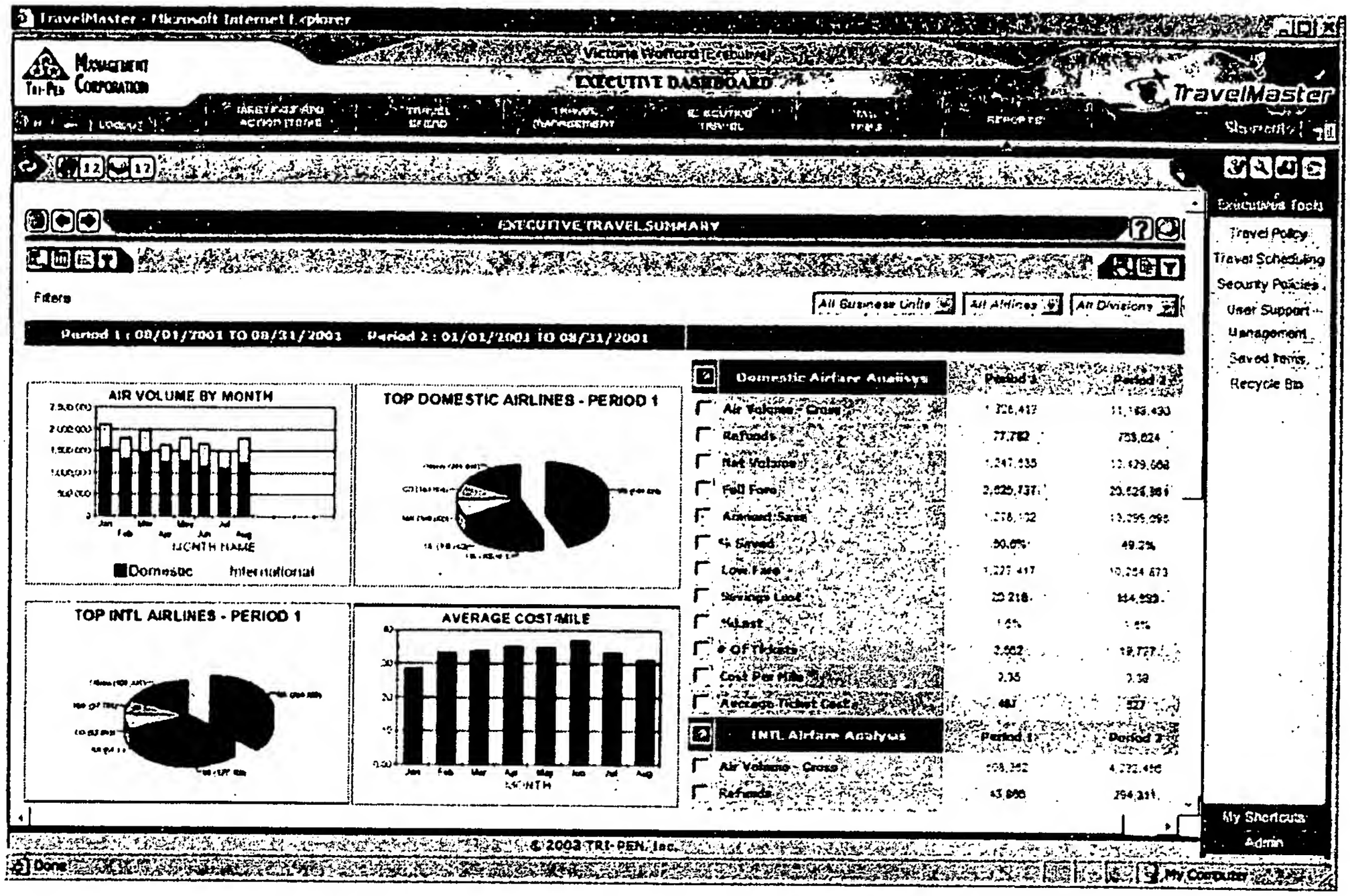
24001

FIGURE 25



25001

FIGURE 26



26000

FIGURE 27

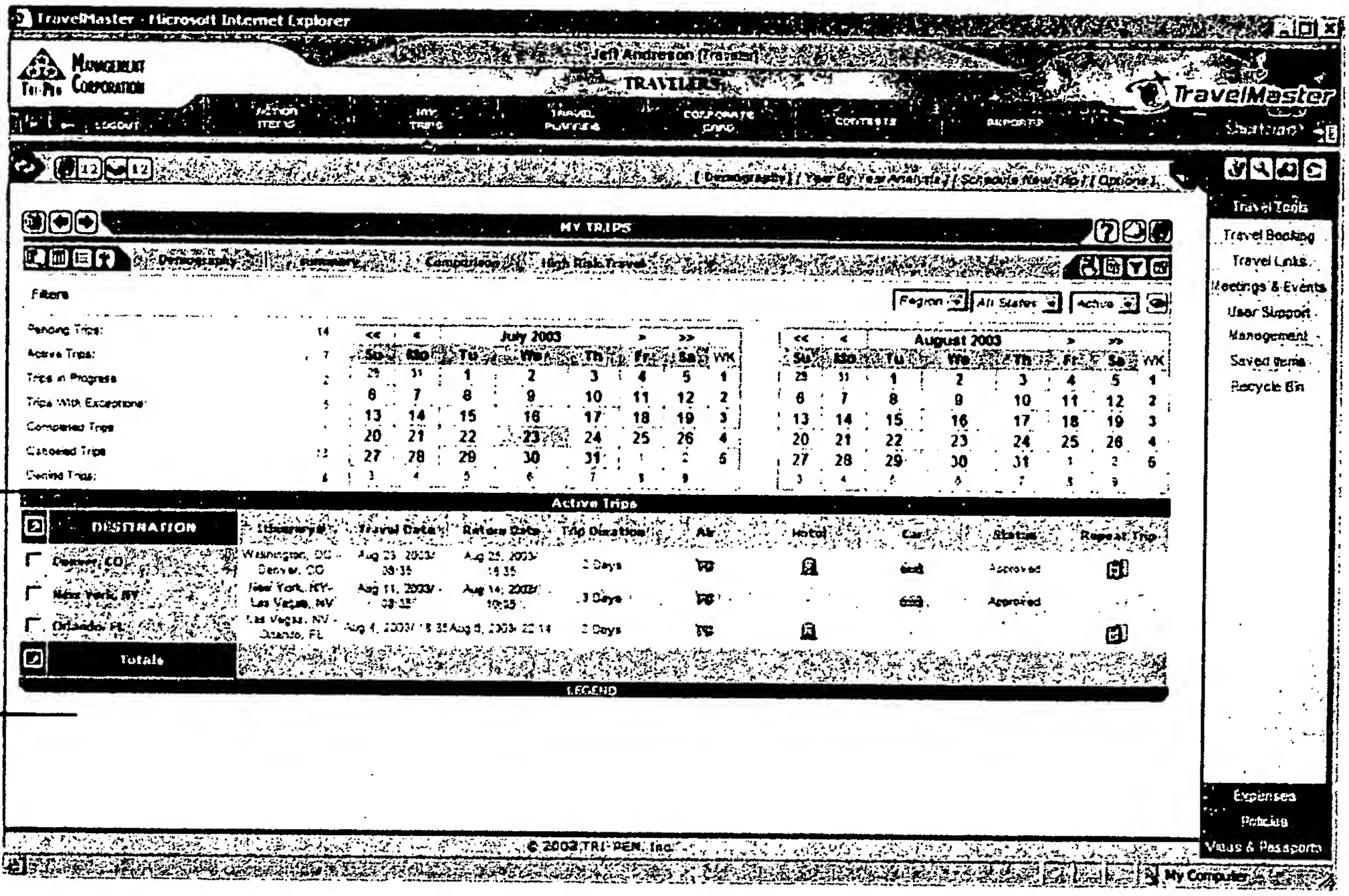

TravelMaster - Microsoft Internet Explorer
TRAVELERS
TravelMaster
MY TRIPS
Travel Tools
Travel Booking
Travel Links
Meetings & Events
User Support
Management
Saved Items
Recycle Bin
Expenses
Policies
Visas & Passports
Active Trips
DESTINATION
Totals
LEGEND
© 2002 TRI-PEN, Inc.
My Computer
27001

FIGURE 28

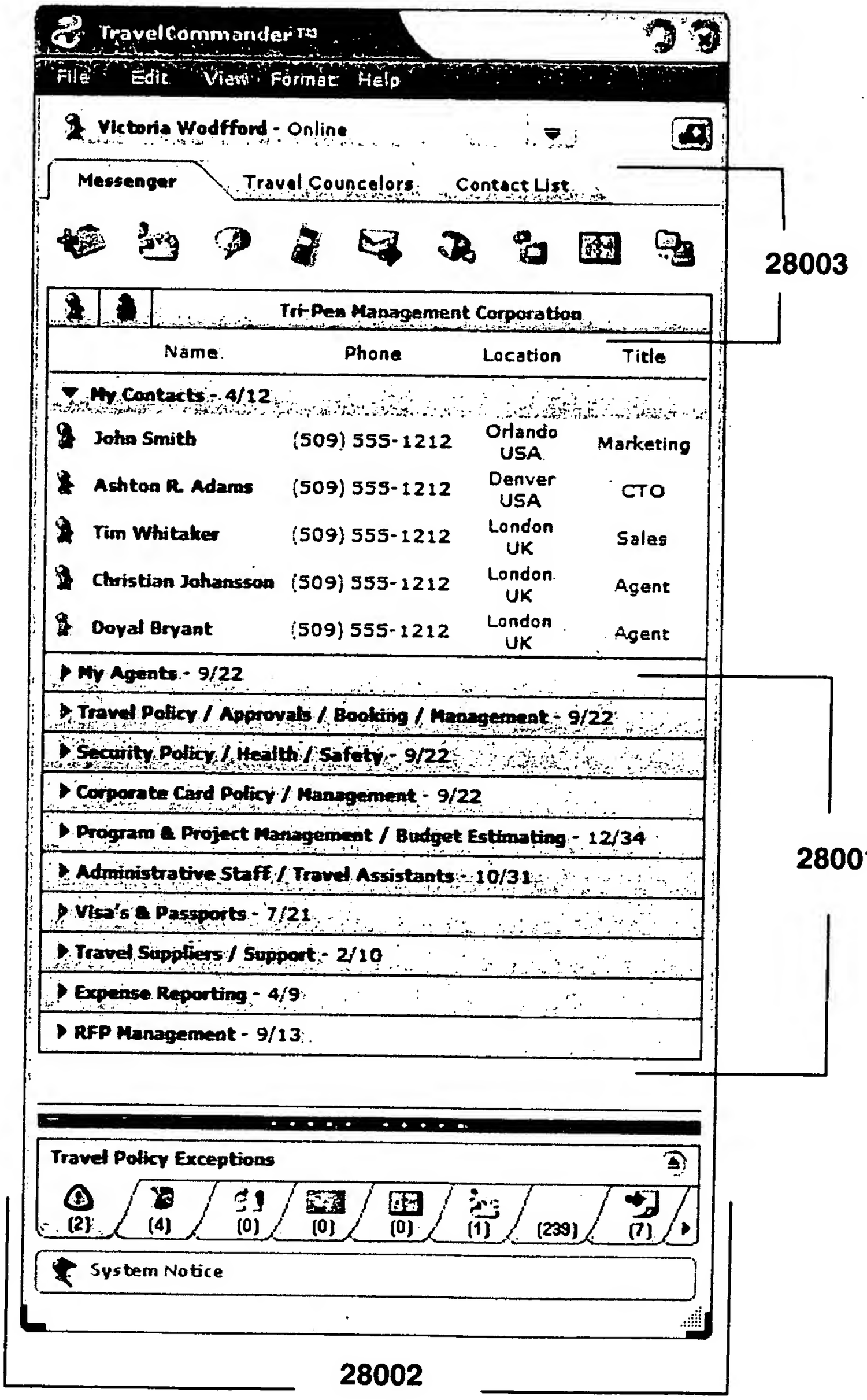

TravelCommander TM
File Edit View Format Help
Victoria Wodfford - Online
Messenger
Travel Councelors
Contact List
Tri-Pen Management Corporation
Name
Phone
Location
Title
My Contacts - 4/12
John Smith (509) 555-1212 Orlando USA Marketing
Ashton R. Adams (509) 555-1212 Denver USA CTO
Tim Whitaker (509) 555-1212 London UK Sales
Christian Johansson (509) 555-1212 London UK Agent
Doyal Bryant (509) 555-1212 London UK Agent
My Agents - 9/22
Travel Policy / Approvals / Booking / Management - 9/22
Security Policy / Health / Safety - 9/22
Corporate Card Policy / Management - 9/22
Program & Project Management / Budget Estimating - 12/34
Administrative Staff / Travel Assistants - 10/31
Visa's & Passports - 7/21
Travel Suppliers / Support - 2/10
Expense Reporting - 4/9
RFP Management - 9/13
Travel Policy Exceptions
(2)
(4)
(0)
(0)
(0)
(1)
(239)
(7)
System Notice
28003
28001
28002

Figure 29

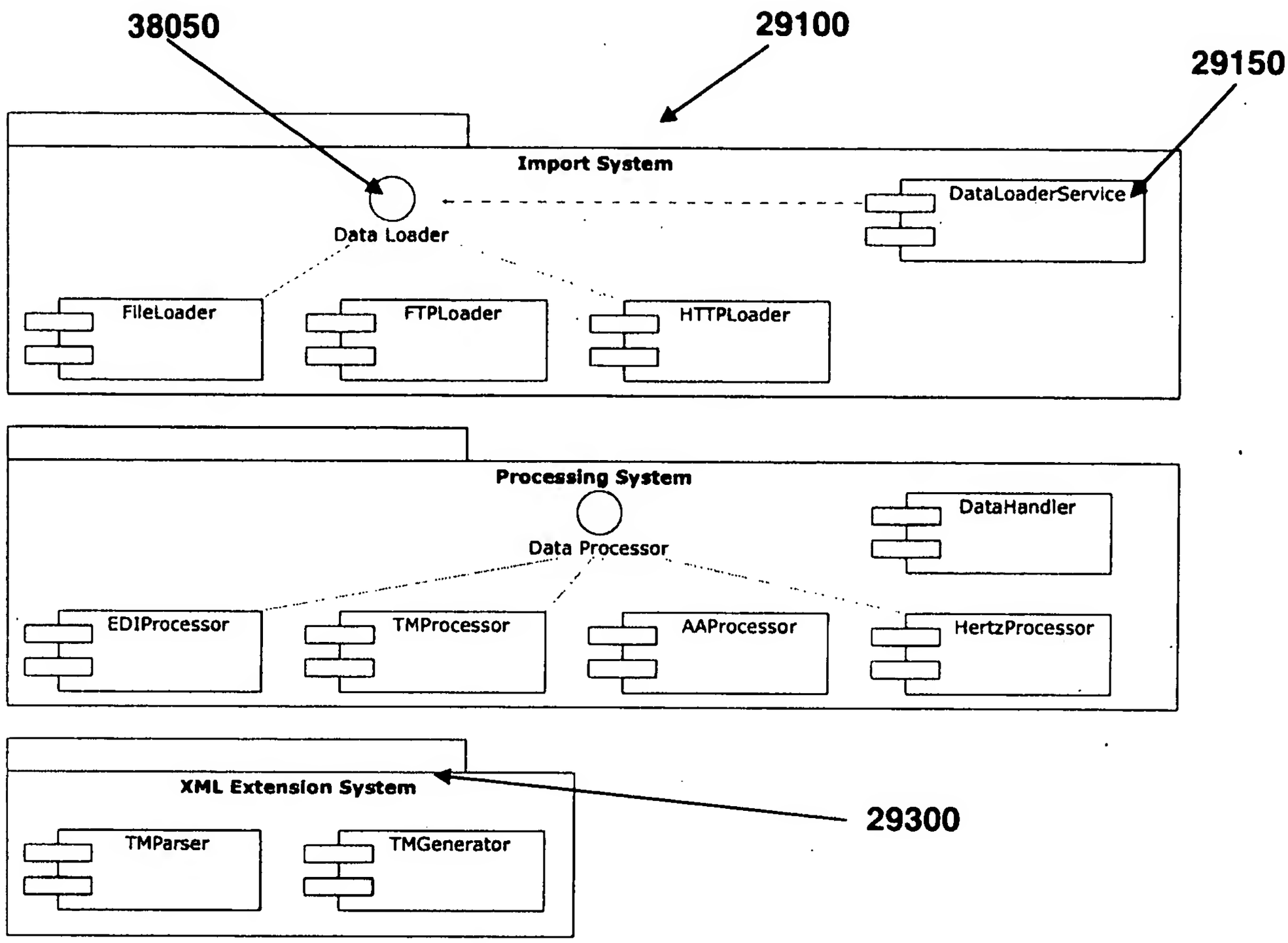

38050
29100
29150
Import System
Data Loader
DataLoaderService
FileLoader
FTPLoader
HTTPLoader
Processing System
Data Processor
DataHandler
EDIProcessor
TMProcessor
AAProcessor
HertzProcessor
XML Extension System
TMParser
TMGenerator
29300

Figure 30

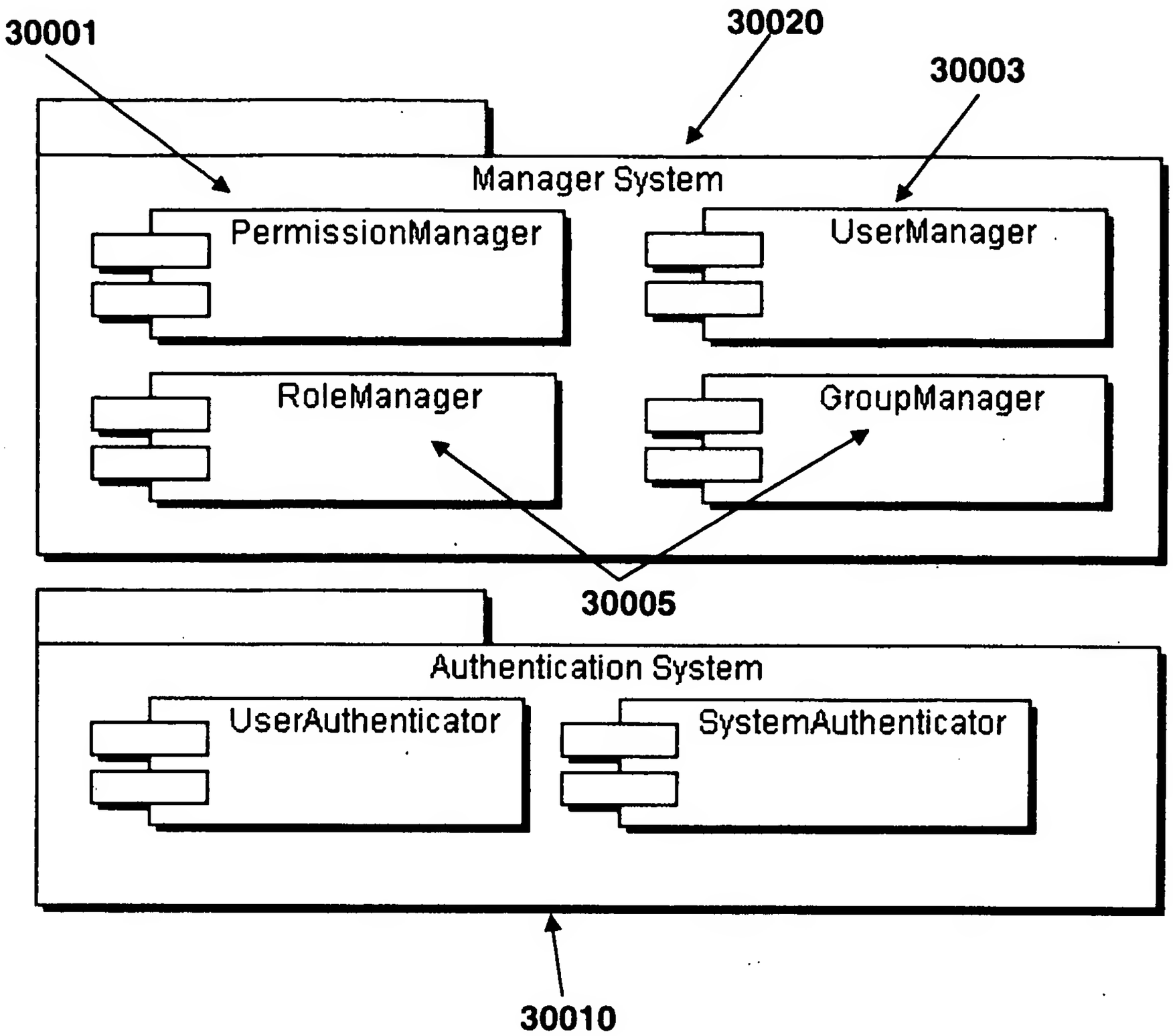

30001
30020
30003
Manager System
PermissionManager
UserManager
RoleManager
GroupManager
30005
Authentication System
UserAuthenticator
SystemAuthenticator
30010

Figure 31

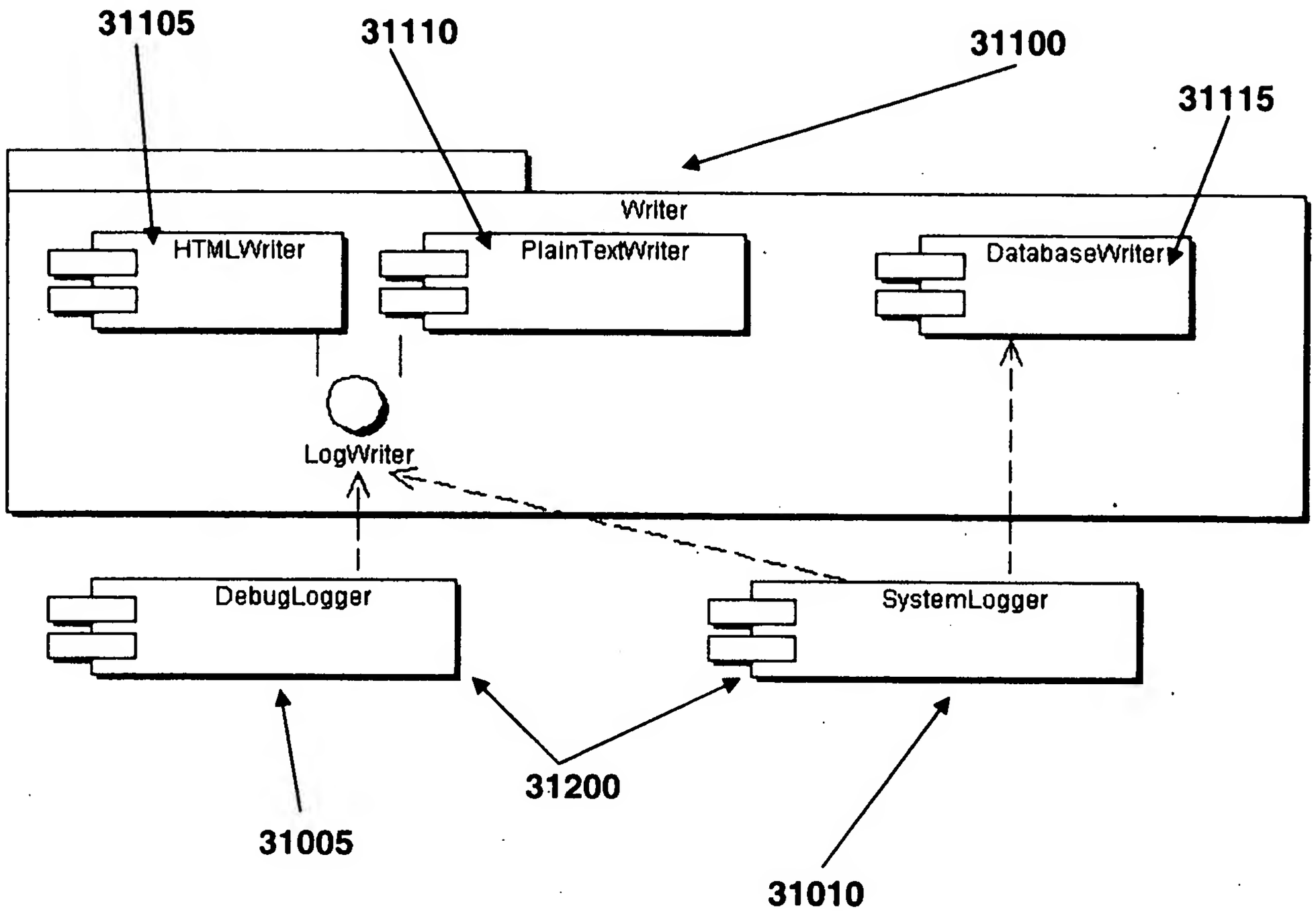

31105
31110
31100
31115
Writer
HTMLWriter
PlainTextWriter
DatabaseWriter
LogWriter
DebugLogger
SystemLogger
31200
31005
31010

Figure 32

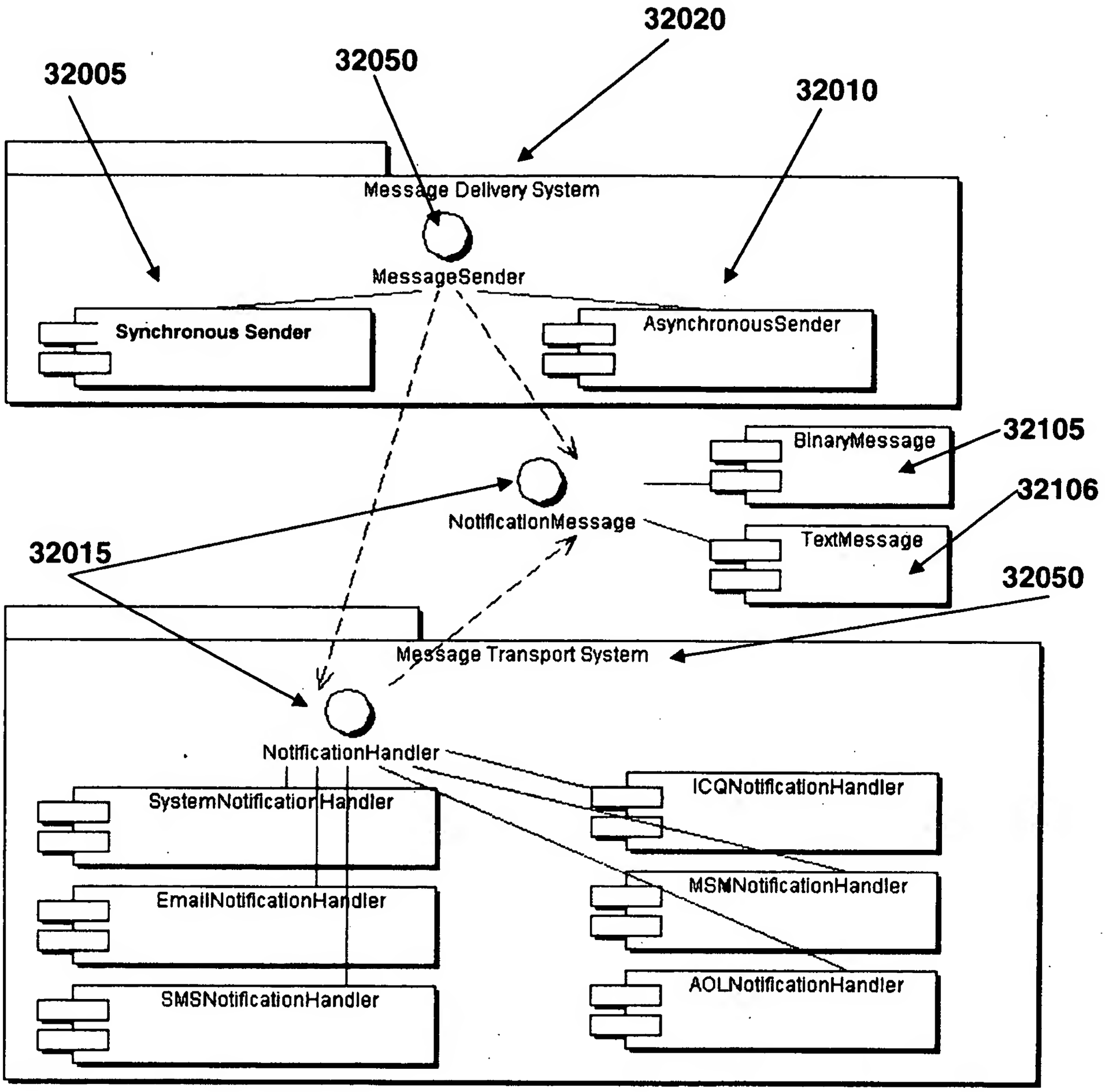

32020
32050
32005
32010
Message Delivery System
MessageSender
Synchronous Sender
AsynchronousSender
BinaryMessage
32105
32106
NotificationMessage
TextMessage
32015
32050
Message Transport System
NotificationHandler
SystemNotificationHandler
ICQNotificationHandler
EmailNotificationHandler
MSMNotificationHandler
SMSNotificationHandler
AOLNotificationHandler

Figure 33

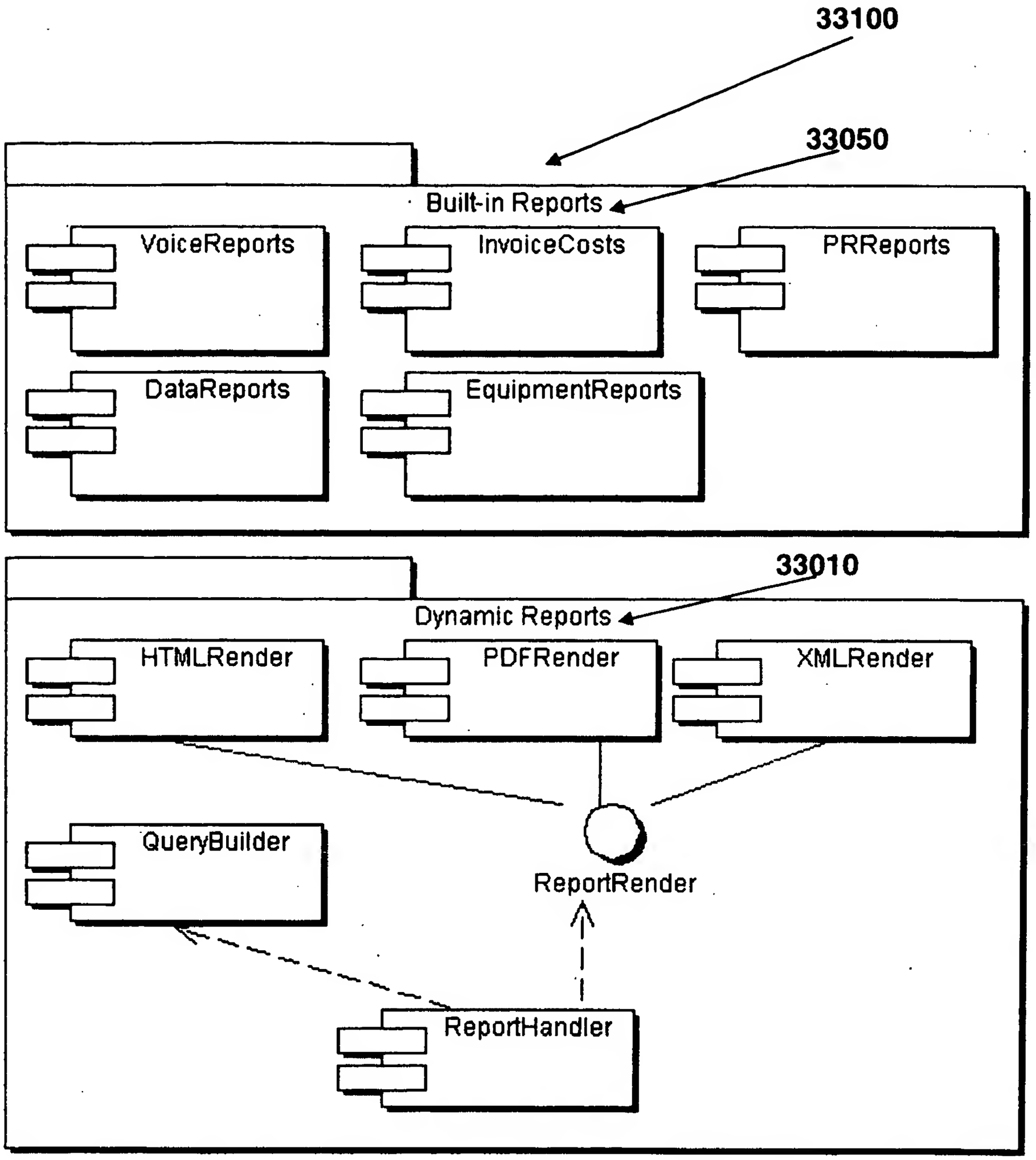
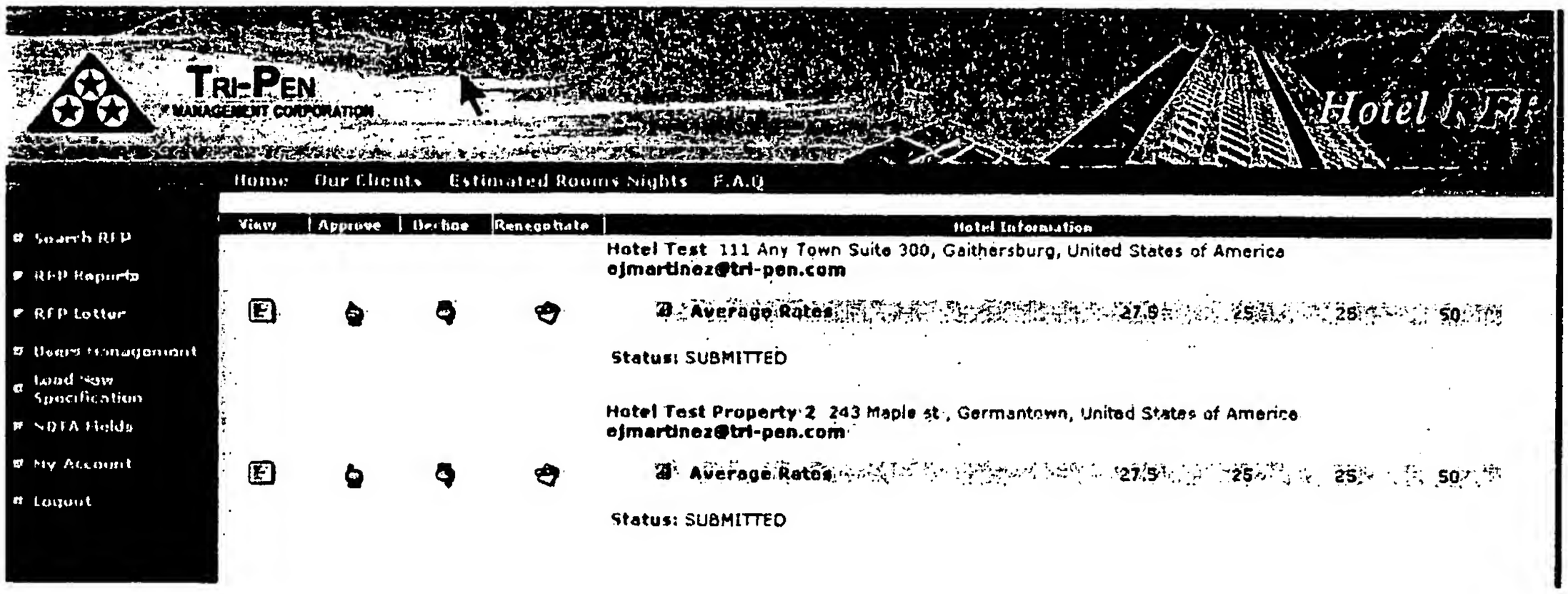

33100
33050
Built-in Reports
VoiceReports
InvoiceCosts
PRReports
DataReports
EquipmentReports
33010
Dynamic Reports
HTMLRender
PDFRender
XMLRender
QueryBuilder
ReportRender
ReportHandler

Figure 34



34100

Figure 35

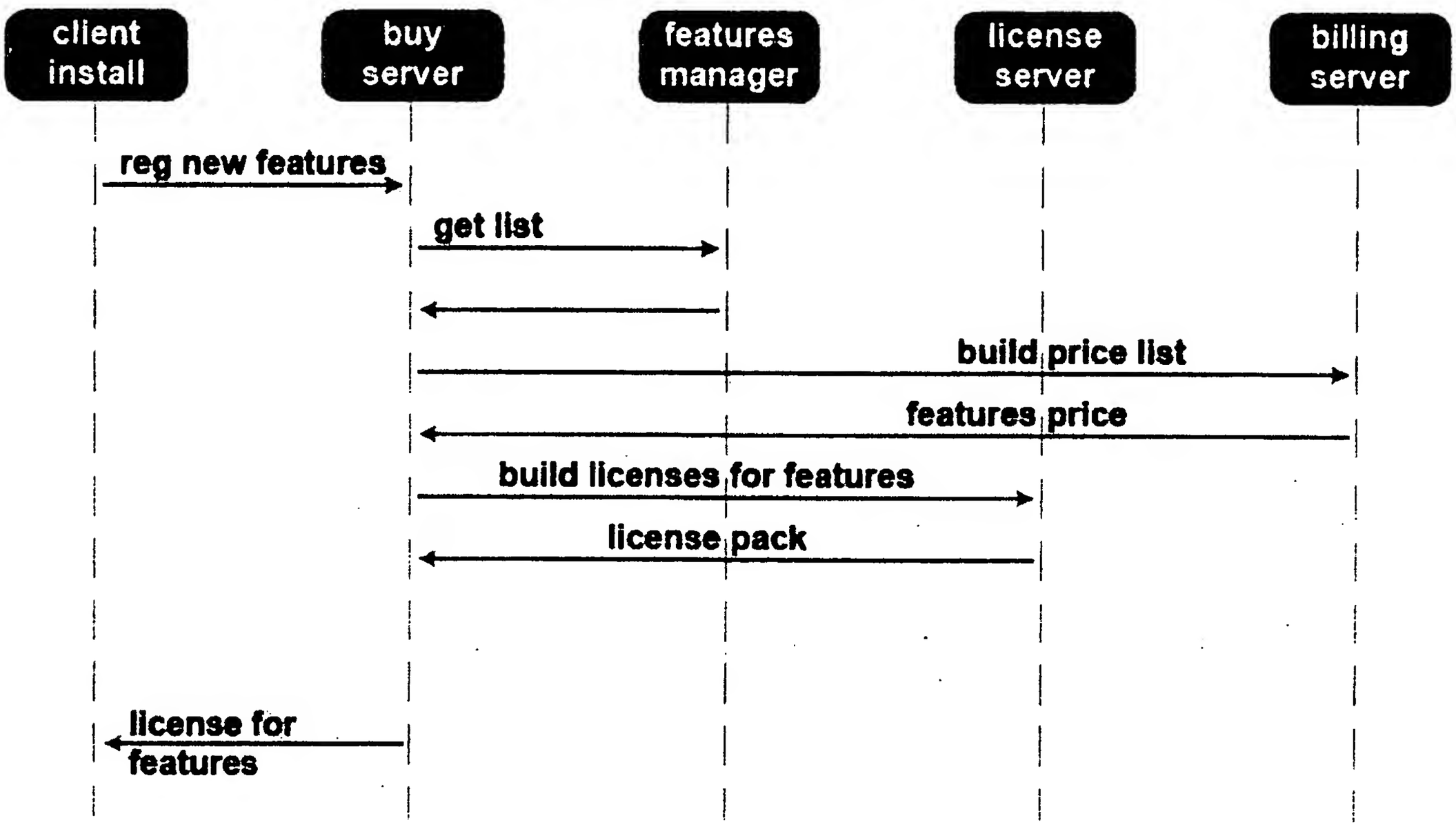

client install
buy server
features manager
license server
billing server
reg new features
get list
build price list
features price
build licenses for features
license pack
license for features

Figure 36

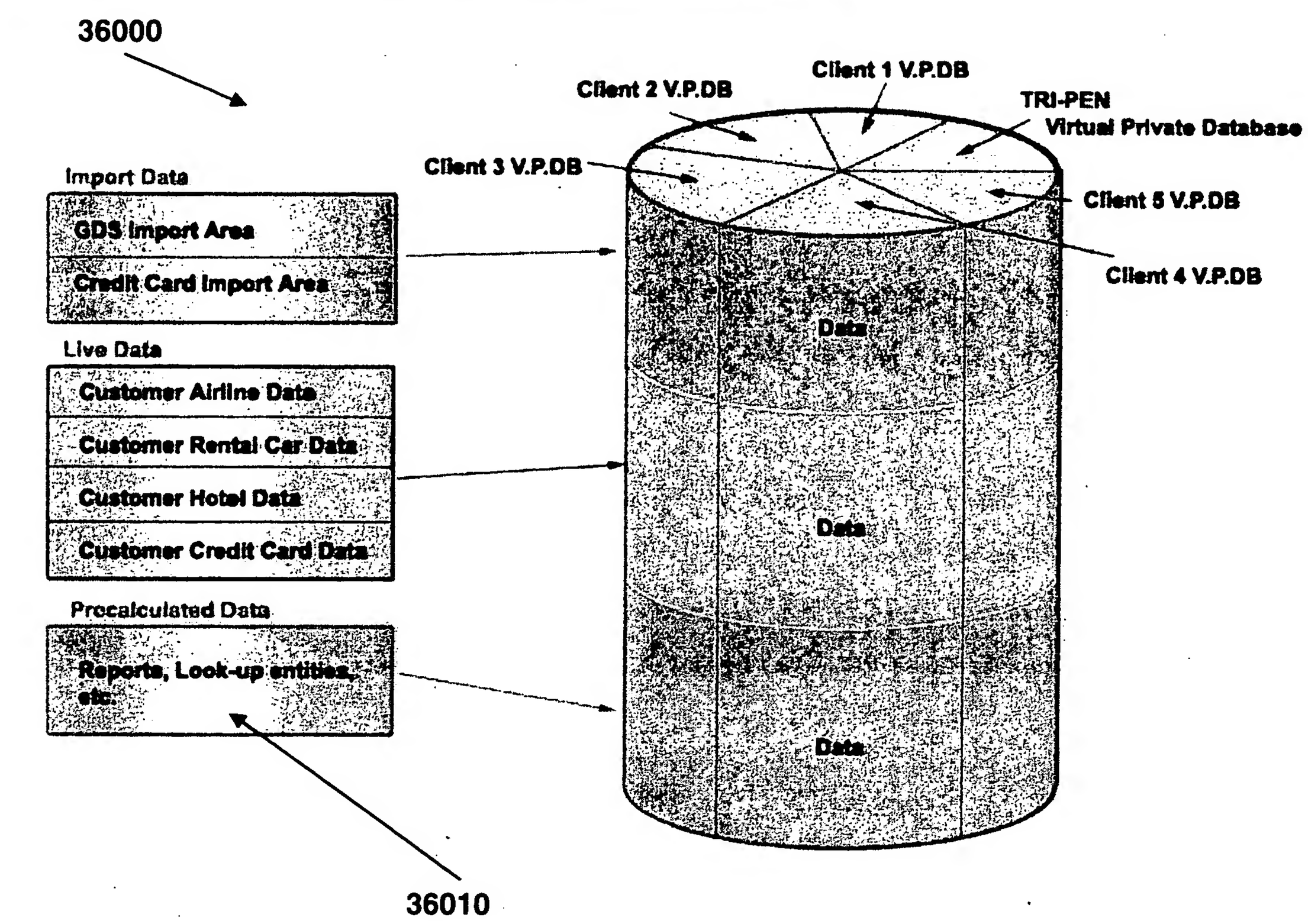

Database Diagram
36000
Client 1 V.P.DB
Client 2 V.P.DB
TRI-PEN
Virtual Private Database
Client 3 V.P.DB
Client 5 V.P.DB
Client 4 V.P.DB
Import Data
GDS Import Area
Credit Card Import Area
Live Data
Customer Airline Data
Customer Rental Car Data
Customer Hotel Data
Customer Credit Card Data
Precalculated Data
Reports, Look-up entities, etc.
Data
Data
Data
36010

Figure 37

Pass Through of Direct Commands Within GDS

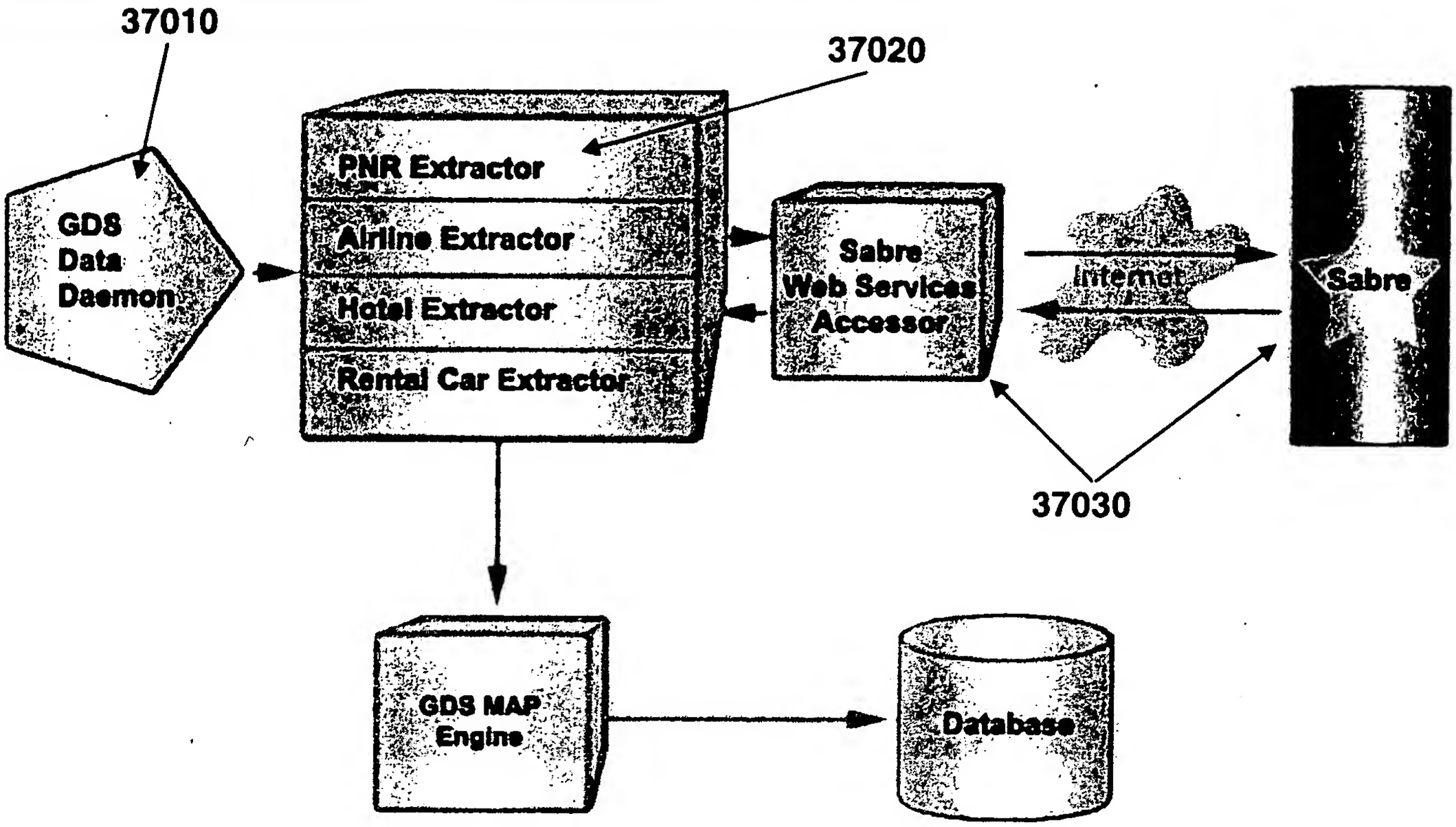


Figure 38

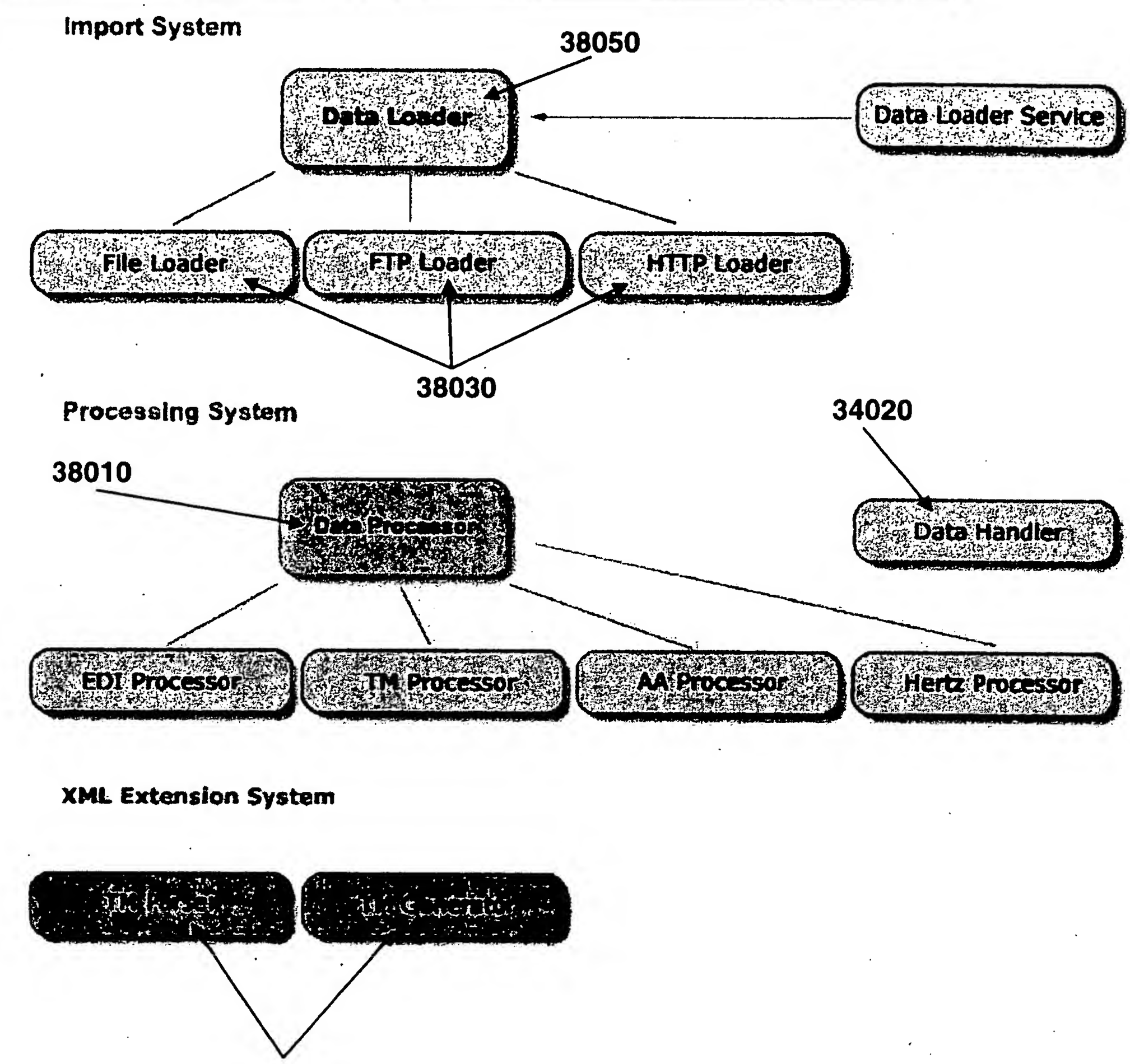

Import System / Processing System / XML Extension System
Import System
38050
Data Loader
Data Loader Service
File Loader
FTP Loader
HTTP Loader
38030
Processing System
34020
38010
Data Processor
Data Handler
EDI Processor
TM Processor
AA Processor
Hertz Processor
XML Extension System
38500

Figure 39

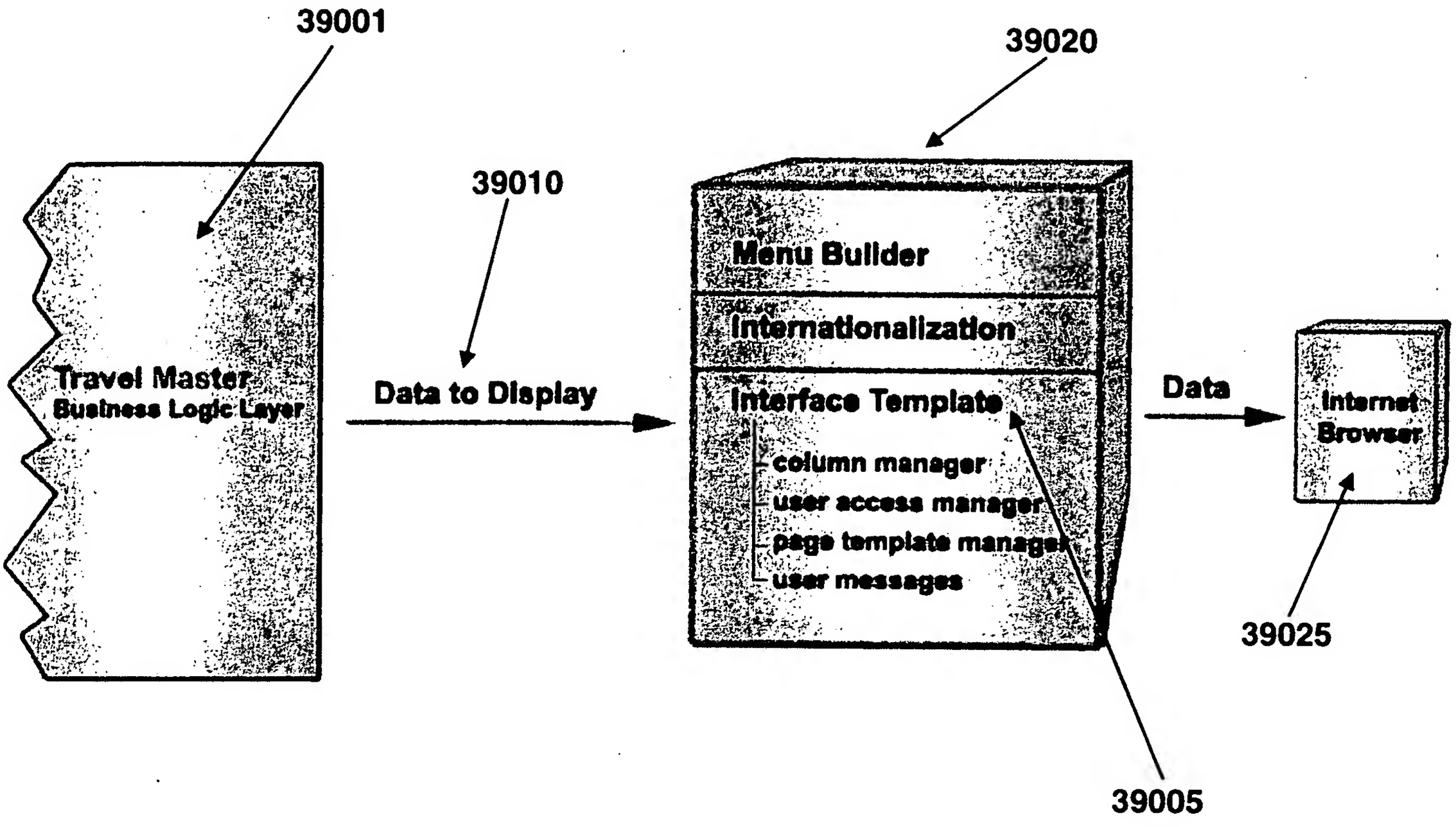

Layout Manager
39001
39020
39010
Travel Master
Business Logic Layer
Data to Display
Menu Builder
Internationalization
Interface Template
column manager
user access manager
page template manager
user messages
Data
Internet Browser
39025
39005

Figure 40

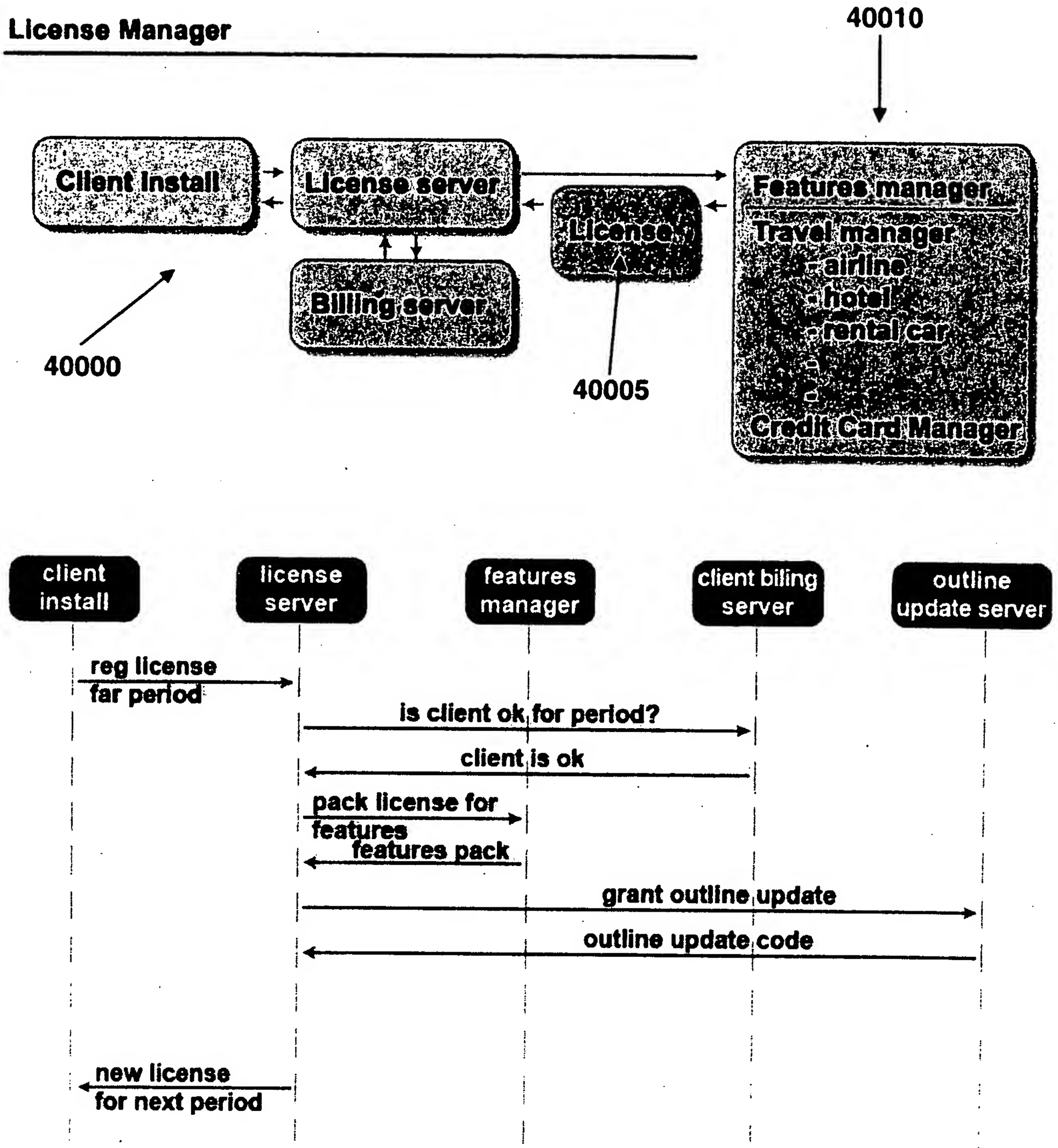

License Manager
40010
Client Install
License server
License
Features manager
Travel manager
- airline
- hotel
- rental car
Credit Card Manager
Billing server
40000
40005
client install
license server
features manager
client biling server
outline update server
reg license far period
is client ok for period?
client is ok
pack license for features
features pack
grant outline update
outline update code
new license for next period

Figure 41

Plug In Manager

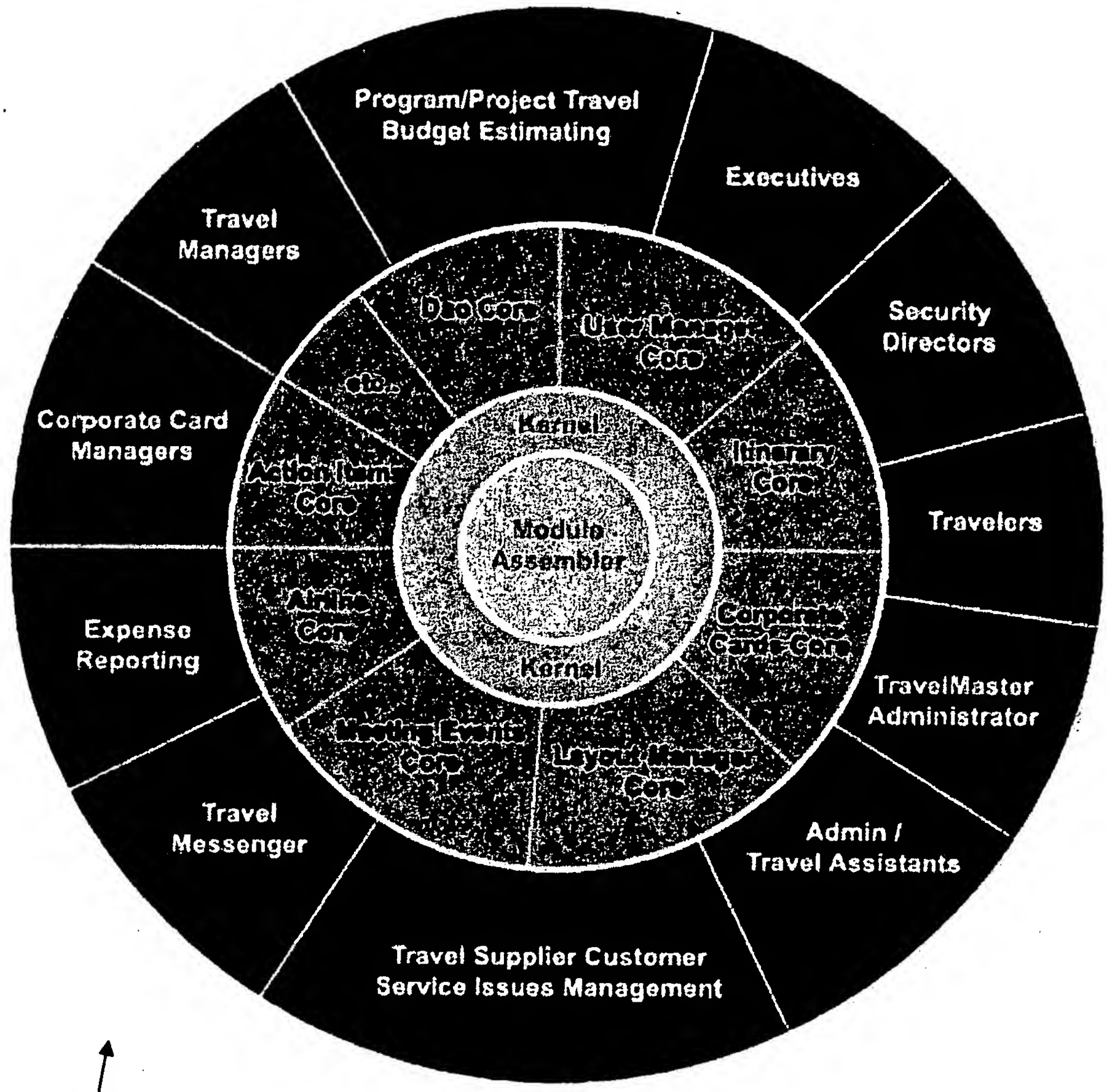


Figure 42

Pre Travel Process

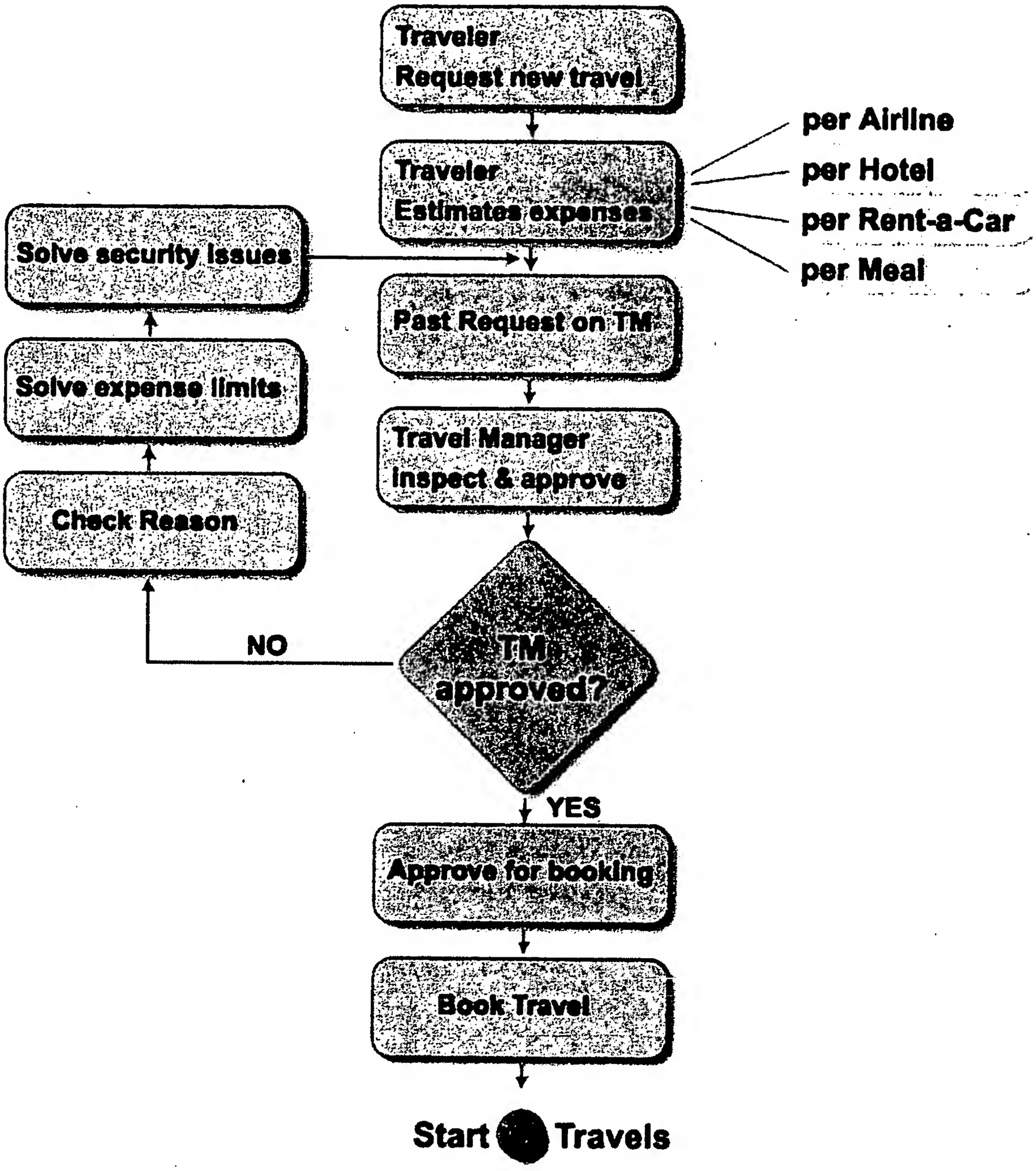


Figure 43

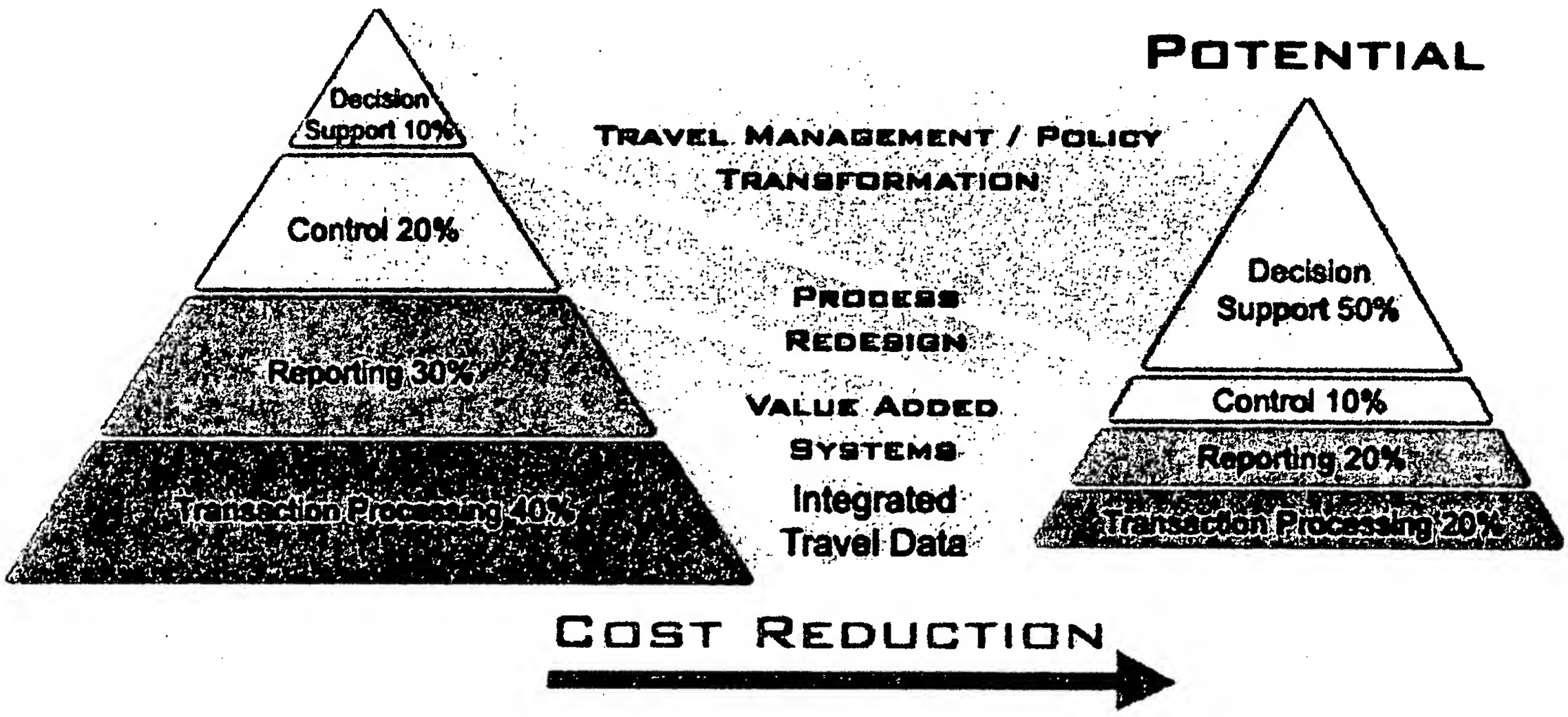
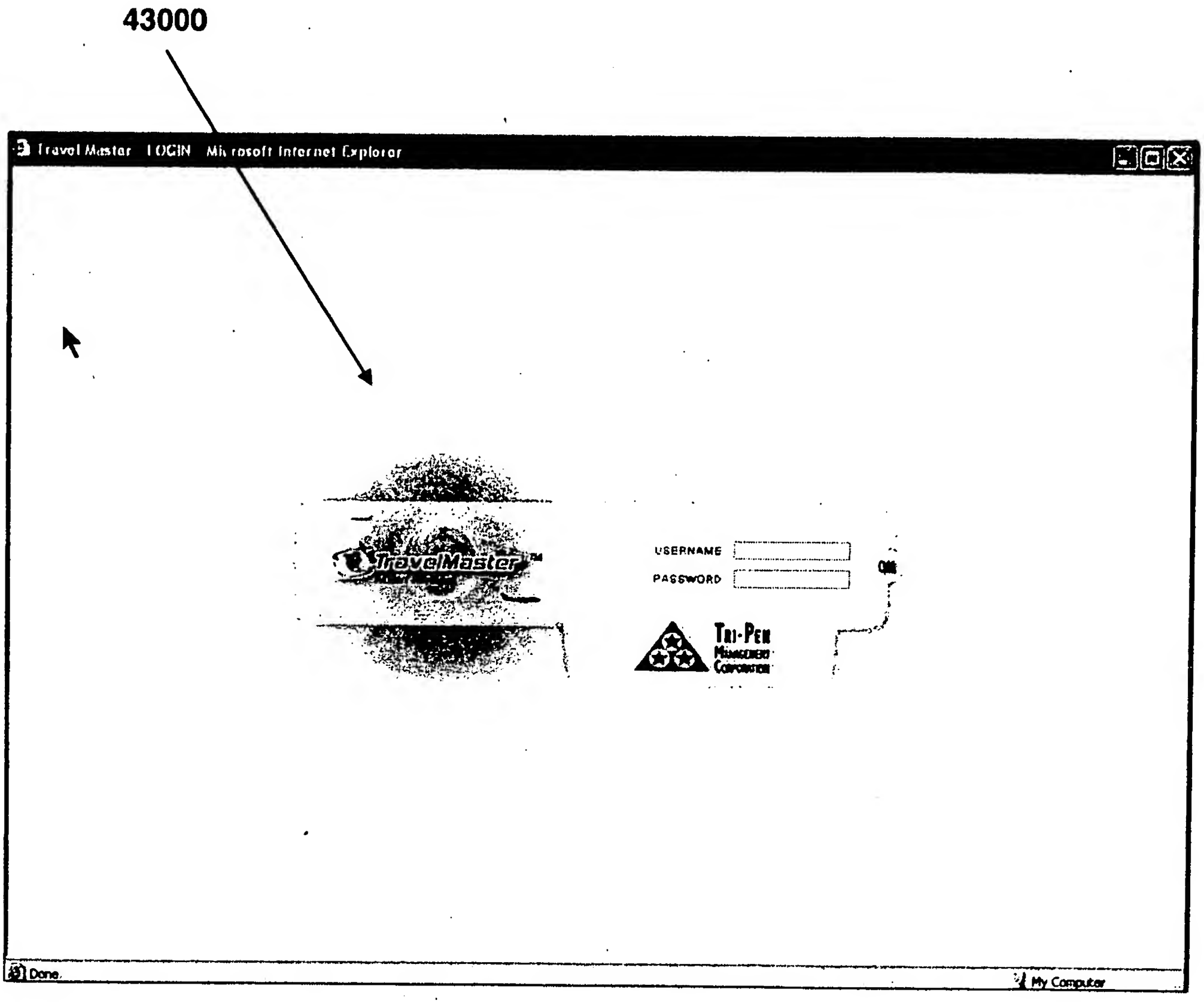

Total Travel Cost Management (TTCM) Cost Reduction
CURRENT
Decision Support 10%
Control 20%
Reporting 30%
Transaction Processing 40%
TRAVEL MANAGEMENT / POLICY TRANSFORMATION
PROCESS REDESIGN
VALUE ADDED SYSTEMS
Integrated Travel Data
POTENTIAL
Decision Support 50%
Control 10%
Reporting 20%
Transaction Processing 20%
COST REDUCTION

Figure 44

Web Based Portal Entry to the TravelMaster System